CHINESE RESEARCHES.

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FIRST PART.

CHINESE CHRONOLOGY & CYCLES

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SHANGHAI, CHINA.

1880.

PRINTED BY THE
AMERICAN PRESBYTERIAN MISSION PRESS;
SHANGHAI, CHINA.

PREFACE.

A mere cursory observation of the opinions held by educated Chinese, regarding the relative position of their government and usages as compared with those of other countries, discloses the existence of a general impression on their part, that China far surpasses all other nations in historical antiquity; and consequently in a more ancient and tried civilisation both political and social, which the Chinese assert has placed them in possession of the accumulated wisdom of ages, and thus entitles them to be considered superior to those other peoples, whose experience they say is only spread over a comparatively much shorter term of national existence.

Such an impression, if even based on truth, would naturally engender an excessive feeling of self superiority over those who are believed not to possess such advantages, just as the Egyptian priests of Sais felt towards the Greeks when they told them in the person of Solon that they were but children in knowledge; but when, as will be presently shown is the case with the Chinese, such assumption of superiority is a mere imaginary sentiment of self esteem without any real foundation, and when through isolation from the rest

of the world, and through this imaginary and questionable superiority, such assumption has never been submitted by them to the test of comparative examination; it acquires a tendency to degenerate into arrogance with all its deplorable results, and it develops itself all the more ostentatiously, as the claim to such superiority is either partly acquiesced in through apathy, or is not peremptorily denied by those nations who are brought into contact with the Chinese, and who have but too readily admitted, and believed in the authenticity of their chronology, and history, and scientific literature. Lord Elgin in his letter to Lord Clarendon, 9th July, 1857, thus expressed his opinion on this subject; "I think it must be manifest to all who have made "our relations with China a subject of close examina- "tion and study, that the obstinate refusal of the court "of Pekin to place itself on a footing of *equality* with "other powers lies at the root of our difficulties with "that country."

Sir F. Bruce in a letter to Lord Malmesbury, 13th July, 1859, writes, "The subjects of foreign nations "residing in China are represented as belonging to "barbarous tribes, as *devoid of civilisation*."

A great deal of the political differences which have sprung up between China and other powers, have arisen from this very sentiment of superiority on the part of the Chinese, and a great deal of the difficulty which has been experienced in settling these differences has been caused by the unwillingness or inability to reasonably

contest this sentiment; and also from it having found to a certain extent some encouragement and support from several writers who, having had familiar intercourse with the Chinese, have been incautiously led to admit too easily, the Chinese claims for superior antiquity and civilisation, through a consequent undue admiration for Chinese institutions, and a credulousness in the supposed ancient origin of their chronology.

This false assumption of superiority grounded on a supposed antiquity has also been and still is a great bar to the Chinese receiving the truths of Christianity, and thus the civilising power of the Christian appreciation of mankind in its self mutual relations is lost to the Chinese.

It is with a view therefore of remedying this unreasonable appreciation of Chinese history that the following researches have been undertaken, by investigating the questions involved in the Chinese assumptions, and by endeavouring to show that their claims are groundless.

As the works treating on Chinese chronology and history are for the most part written in French and other foreign languages, which are not easily obtainable now-a-days; and as it seems desirable to make them more accessible to English readers, by translations of such portions of them as treat on the subject in hand; these researches have also been compiled with regard to those circumstances: so that they may serve as a work in English for reference and information for

all persons who officially or otherwise are brought into contact with the educated class of Chinese, and also for Christian missionaries to whom a true appreciation of the history of the people which they seek to convert cannot be otherwise than useful. The works also that are written in English not being within reach of many, extracts from them are herein given, so that whatever has been adduced by students of Chinese literature and history on the question of chronology may be brought together in one work and made readily available.

Should the result be in any way useful in bringing about a critical and correct appreciation of Chinese antiquity and civilisation, and in checking the exaggerated sympathy which has been produced through the skilfull and artificial representation by Chinese of their own history; the writer will be amply rewarded for the reading and thought that these researches have entailed, though he has kept in mind throughout the whole course of his researches, the words of Sir Wm. Drummond, "The writer who endeavours to separate truth from fiction in ancient history, undertakes a task which is more likely to prove laborious to himself than agreeable to others." Origines Vol. I, Preface, page VIII.

Chinese Chronology and Cycles.

Chapter I.

General View of the Question.

In order to start with a correct notion as to what Chinese chronology clearly is, so that it may be clearly understood what is thereby meant in the hereinafter investigation, it is necessary to state *in limine* that there is no generic difference assumed to exist between the system adopted by the Chinese, and that used by other nations, for recording the relative succession of events, in time, during the term of their existence.

The special character of Chinese chronology which will here come under consideration, is its unsupported pretension to authenticity as a record of occurrences, in China. Here however a distinction need be drawn between the undoubtedly mythical and fabulous ages which the Chinese, as well as other oriental nations, endeavour to compute by improbable periods; and the other probable sequence of events in time, which, as far as regards the ascertained chronology of other ancient nations, does not involve any impossibility of accordance with their history.

Thus, the ages preceding the date of the supposed monarch of China, Fu-hi, or even of his immediate predecessors and successors are not here admitted as deserving critical examination; as erudite Chinese themselves exclude the times in which these personages are placed in their history, from any possible and accurate chronology of China. It is only with the chronology which begins with Hwangti, B.C. 2704, that the present researches are concerned; as this is the earliest debateable epoch about which even Chinese agree that it can form a legitimate object of discussion, and it may be assumed as the era of China, with which their chronology starts and begins at his reign.

Properly speaking the Chinese have no precise era like that of Nabonassar, or of the Jews, or of the Mahometans, or of the Christians, inasmuch as the era of Hwangti is neither a certain one, nor is it universally acknowledged by the Chinese, though it is officially adopted by their government just as it has adopted Chinese history in order to prop up its own claim for antiquity. The absence of such era, by itself, would alone suffice to call in question the accuracy of Chinese chronology.

The motive for impugning the chronology of the Chinese is not that it involves any historical impossibility by reason of its reaching too far back into antiquity. With the experience lately gained through Egyptian, and Babylonian, and Assyrian historical monuments, which clearly prove the existence of these

two nations thousands of years ago, every one is quite reconciled to allowing any other nation, such as the Chinese, to share in a similar venerable ancient existence, provided their claim to such can be substantiated. It is partly because the annals of those undoubtedly ancient nations make no mention of a coeval empire of China, that a reasonable doubt is suggested as to the reality of the chronology on which the antiquity of that empire is founded; for had China been in those times the seat of science and civilisation, and of the extent and power which are attributed to it, China would have had such a remarkable prominence in the social world that it could not have been unnoticed or unrecorded. It is this absence of any mention of China from the records of known ancient nations that even justifies a refusal to receive any part of its ancient history except with hesitation, and that also necessitates a most careful investigation as to its truth.

To any one thus approaching the general question of the authenticity of Chinese chronology, it seems to turn on the point, whether the historical compilation in which this chronology is embodied, and which is presented by the Chinese for our acceptance, is supported by synchronous monuments and trustworthy records; or whether it is a narrative composed at a recent modern period, on dubious slender evidence, and skilfully adapted to fictitious dates of ancient times for the purpose of giving it an appearance of circumstantial accuracy.

It is therefore impossible in the present researches altogether to separate the consideration of chronology from that of history, although the examination of the latter will be here only subservient to the former, and will only occupy a secondary position in this part of the investigation. The special question of Chinese history will be discussed in part No. II, of these researches.

The Roman Catholic missionaries who in the 16th, 17th and 18th, centuries of our era, first examined Chinese historical literature, were so struck by its regularity and cohesion, that several of them such as Du Halde, Gaubil, Couplet, Viseldou, Parrenin, Martini, Amiot, and De Mailla, unhesitatingly received the chronology contained in it. The Abbé Grosier in his "discours preliminaire" to De Maillas history of China Vol. I, page 22, thus eulogizes the Tong-kien-kang-mou of which De Mailla's work is a translation. "The "authority of these annals is irrefragable in China, and "the learned persons of that empire exhibit an esteem "for this collection which is akin to veneration"—and this sentence may be taken to express the opinion of all the above mentioned missionaries on the subject. De Guignes, in his preface to the Shoo-king, page 25, "says, that the long suite of Chinese historical works "has imposed on the missionaries and the savants "of Europe. The greater part of them have belived "that Chinese chronology merits a special attention "and that it is even preferable to any other similar "system."

They accordingly transmitted translations of the chief historical books of the Chinese to Europe, where the French savants such as Deshauterayes in his obser- "vations" prefixed to De Mailla's "Histoire Générale de Chine," Fourmont, Remusat, Pauthier, and Biot, at once admitted their authenticity, coming as they did from such an authority as the learned and respectable Roman Catholic missionaries who had recommended and adopted them as worthy of credit. The special subject of Chinese chronology has been extensively treated by Fréret in the 13th and 14th, volumes of his works, Paris, 1796 and by Gaubil in his "traite de la Chronologie Chinoise," and both these authors have expressed nearly all that can be urged in its favor.

Others among the missionaries, such as Cibot, and Premare in his "discours preliminaire" to the French translation of the Shoo-king by Gaubil, took an opposite view of the question, and by a careful examination of what even some Chinese themselves had written on the subject of their own chronology, they came to the conclusion that they felt justified in having misgivings about the credibility of the Chinese historical system; and naturally enough this distrust in Chinese chronology which they expressed, was also manifested by scholars in Europe, such as De Guignes, in his preface to Gaubils French translation of the Shoo-king, and Klaproth in his "Memoires sur L'Asie," Rev. George Costard, in Vol. XLIV, of the "philosophical transactions," page 476—the Abbé Renaudot, M. Dourtoux de

Mairan. Fréret too in the first part of the 13th volume of his works, exposes the unreliability of Chinese chronology, although in a subsequent dissertation, he takes a more favorable view of it. His statement and arguments will be examined in another chapter of these researches.

In the present day Dr. Legge in the "prolegomena" to his English translation of the Chinese Classics, Dr. Chalmers in his "origin of the Chinese," and W. F. Mayers in his "Chinese Readers Manual," have not hesitated to declare their conviction after careful study of the question, that Chinese chronology is entirely unreliable, though Dr. Legge in his introduction to the 3rd volume of "The Sacred Books of the East" Oxford, 1879, somewhat modifies his previously published opinions about Chinese history. Canon M'Clatchie has also contributed some valuable papers in the North China Herald of 1872 on the antiquity of the Chinese, in which he also contests the accuracy of their chronology.

There are therefore, and have been, from the time when Chinese chronology first came under the consideration of the studious, two opposite opinions on the subject; and now, since the discovery of undoubted ancient monuments in Egypt and Assyria has justified the attribution of great historical antiquity to those countries, and has overcome previous doubts about them, a similarly favorable feeling has been revived in the minds of some persons, that Chinese chronology should be also considered and maintained to be equally

credible with that of Assyria and Egypt. Unfortunately for such analogy no authentic ancient monuments have been yet discovered in China which corroborate by their testimony the chronological system of that country as has been done in Egypt.

The only monument which has any pretension to antiquity is the so-called Tablet of Yu, a description of which was published by Hager. Dr. Legge, in his prolegomena to the Chinese Classics, Vol. III, pt. I, of his translation of the Chinese Classics, page 67 and following, reviews the history of its discovery in the 13th century of our era, and concludes, "The review which "I have given of the history of the stone sufficiently "shows in my own opinion, that it is not entitled to "the least credit; and I am supported in this view by "the great majority of Chinese archæologists" page 71.

Mr. C. T. Gardner of H. M. Consular service in China has also given an account of this Tablet of Yu in the *China Review* for March and April 1874, page 293, and although on the whole he contends for its "probable "antiquity," he admits that no Chinese scholar, pretends "that this inscription found in A.D. 1212, was the original tablet engraved by Yu." He supposes that when "all the books and ancient records were destroyed by "the order of the Emperor She hwang-ti B.C. 212," "among them for a time perished the Yu monument," but there is no proof that the tablet existed then, and the edict of She hwang-ti so clearly specifies the books that were destroyed, that Mr. Gardner's hypothesis is entirely

unsupported by evidence. He urges "nothing could be "more probable than that certain scholars should have "learnt by heart the Yu inscription, and should have "again cut a tablet containing it," but even this supposition is founded on the first mentioned surmise that an original tablet had been destroyed. The Chinese authors which Mr. Gardner quotes to support his views are not earlier than the present dynasty, and they offer nothing unnoticed by Dr. Legge in his review of the history of the Tablet. He concludes that "although the ancient "inscription itself is in all *probability* genuine, the "modern Chinese transcripts must be received with "great caution, Chinese scholars going through all the "shades of doubt to utter credulity on the subject," so that as an authority on the subject of chronology the Tablet of Yu is entirely valueless.

Gaubil in his "traite de la chronologie Chinoise" page 66, states that She hwang-ti "erected a stone tablet on "which was engraven the eulogy of himself" and as this remark is made immediately after the description of that emperor's journey "to the tomb of Yu on the "mountain of Hoey Ki in the district of Chao-hang in "Chekiang," it may be this tablet of She hwang-ti that has been mistaken for one erected by Yu himself. Gaubil mentions in a note to this passage that "the remains of this monument are still to be seen."

F. Lenormant in an article entitled "The Deluge" in the *Contemporary Review* for November 1879 page 466, makes the following remarks on the Tablet of Yu;—

"This inscription appears to present an intrinsically "authentic character, sufficient to dispell the doubts "suggested by Mr. Legge, although there is this rather "suspicious fact connected with it, that we are only "acquainted with it through ancient copies, and that "for many centuries past the minutest research has "failed to rediscover the original."

The Chevalier Paravey in his "Essai sur l'origine "unique et hierogliphique des chiffres et des lettres "de tous les peuples" Paris 1826 page XXXIII, has the following remarks on the Tablet of Yu;—"With regard "to this inscription which has been cited in such a "triumphant manner, we will merely say that it might "just as likely have been traced on the rocks of the "Euphrates, or of the Oxus, as in China, and have been "thence copied and retranscribed in the pretended "middle empire. The learned Gaubil, writing from "Peking, and who, to say the least, was as clever as any "European sinologue, does not even mention it in the "very place (page 188 of his Chinese Chronology) where "he discusses whether there are any very ancient "monuments in China, and concludes that there are "none; and where nevertheless he makes mention of "the works of the great Yu." See also an article in the Journal of the North China Branch of the Royal Asiatic Society for 1868, in which the story about Yu's tablet is regarded as apocryphal. In the dissertation in the Journal of the R. A. Society North China Branch for 1868, page 78, referred to by Mr. Mayers,

C. R. M., page 281, Mr. Medhurst remarks on the Shen-Yu-pai, or Tablet of Yu, "To this day it remains "a matter of doubt as to how far such an inscription "ever had any existence, and at the same time a "mystery as to what common origin, if any, may "be ascribed the several reputed fac-similes, copies, "or tracings, of the inscription which are undoubtedly "to be found in various parts of the empire." Mr. Medhurst gives a brief critical notice of the inscription, by Tang Siün-fang, "a native of the locality "in which the original inscription is said to be found, "and an individual of both rank and education," who states "the opinion commonly prevalent, to the "effect that the tablet had been inscribed by Yu in "order to commemorate his miraculous deeds, was "entirely groundless.

Another ancient monument or series of monuments exists in the so-called stone drums of the Chow dynasty, of which an accurate account has been given by Dr. S. W. Bushell, Physician to the British Legation, Peking, in the journal of the North China Branch of the Royal Asiatic Society, New Series, No. VIII, page 133. They are supposed to belong to the time of the sovereign Hsuan-wang, B.C. 827, 782, and they were first discovered in Shensi about A.D. 627–649, in a portion of the ancestral territory of the Chow dynasty, during the early part of the Tang dynasty. Dr. Bushell, with great fairness, gives the arguments *pro* and *con* used by Chinese archæologists, and concludes

that those who maintain the authenticity of the drums have the best of the discussion. Whatever may be thought of these monuments they are of slight importance, as they only record a hunting expedition of the sovereign Hsuan-wang, an event which was not even recorded in the annals of his reign, and which according to Chinese critics prevents them from being thoroughly identified with this epoch in chronology.

Another supposed ancient inscription in Chinese which is said to exist on a terra cotta vase discovered by Dr. Schliemann, at Hassarlik, has been lately brought forward in support of Chinese antiquity—but though the Chinese ambassador in London, 1879, affected to discern Chinese characters in the inscription, Professor Sayce in a letter to the *Times*, 11th June, 1879, effectually disposes of their not being Chinese, but of the Cypriote syllabary—See also *China Review*, for July-August, 1879, with Dr. Bushell's remarks on it, who declares that it cannot be accepted as certain. This syllabary will come under consideration in the fourth part of these researches.

Amongst the supposed ancient monuments of China are also the seventy-two tablets engraved by order of seventy-two ancient Chinese sovereigns before Fu-hi, on the mountain Tay-shan, in Shantung. Gaubil in his Chinese Chronology, page 280, states that all which is said on the subject is a fable, and calls them, "pretended tablets," and he adds that the only ancient monument to be found on Tay-shan, is the remains of

an old marble or stone tablet erected by order of She hwang-ti, in memory of his journey to that mountain. The support of ancient monuments in confirmation of the Chinese system of chronology is thus wanting, and neither is there any external testimony forthcoming from the records of other nations to supply this deficiency of evidence, and to testify to the antiquity of the Chinese either as a nation, or to the chronology as propounded by the above mentioned writers; unless some of the yet undecyphered cuneiform tablets in public or private museums may furnish unexpected proofs in in its favor.

Chabas in his "Etudes sur l'antiquitè" chap. 4, page 97, "sur les nations connues des anciens Egyptiens," shows that in the monuments of that country there is no mention of any country known to the Egyptians that corresponds to China, though they knew all the other established nations synchronous with their own early history.

There are old traditions that the Egyptians had colonies as far east in Asia as Bactria, at a very ancient date. Diodorus Siculus says that in times of remote antiquity the Egyptians had sent out colonies over the whole known world, (see Sir S. C. Lewis, An historical survey of the astronomy of the ancients, page 261) and this has been recently elucidated by Morreau de Jonnes, who cites the ancient authorities on the subject, in "L'ocean des anciens et les peuples antehistoriques, chapter, "Les colonies coushites," Paris 1873. He shows that Bamian was the capital of the Egyptian

colony, and that the Ethiopians who he identifies with the Lybians of Africa had built seven cities in Sogdiana, and he adds that to this day villages entirely peopled with blackmen, doubtless descendants of these Africans, are to be found in Thibet, and he quotes the geographer Ritter as evidence of this, and he associates them with the Chorasmians and Bactrians.

China therefore from its vicinity to that region and its probable connexion with it while under Egyptian rule, must have come within the knowledge of the Egyptians had it been an empire at that time as the Chinese contend. That there existed a very full knowledge of Egypt in Eastern Asia is evident from the description of that country in Sanscrit literature. Lieut. F. Wilford in Vol. II of the supplement to Sir W. Jones works, London 1801, has shown this clearly, and Baldwin, "Prehistoric Nations" page 53, writing of the old Sanskrit scheme of geography as found in the Puranas, and other ancient books, says that Africa was known as *Cusha dwipa*. If therefore Egypt was well-known in India ; and by the India of the Sanskrit books was meant the Jambu dwipa or the centre of the world, and the ancient home of the whole Aryan race, much to the east and north of Hindustan, and which was the old Iranian empire with its capital Balkh ; it may be inferred that the Egyptians reciprocally knew the East of Asia by which they were known. Baldwin op: cit : page 64 says that the Auga dwipa was the country of the Manchu or Mongol people, and the *Yama* dwipa

was the ancient Chinese empire; but a doubt might be suggested whether the identification mentioned is borne out by facts or other history, though at the strongest view of Yama being China, it would not follow that the country then known as such was the seat of a great empire like Egypt with which it is made synchronically to exist. The geography of the Vendidad which mentions the fourteen Aryan Settlements certainly does not mention China among the Aryan civilizations; though it mentions the Haptu Hindu or India. The communication between Bactria and China must have been much easier then, than it is even now, and there seems to have been a continued series of cities between Kashgar to Lobnor and China on the south side of the present desert of Gobi, from Khoten to Lobnor; while on the northern and eastern side between Hami and Kansuh there were also cities and large populations. Forsyth in his article on the buried cities in the great desert of Gobi—"Journal of the R. G. Society 1877," mentions ruins of several ancient cities, the principal of which is Kok-noor, or the blue lake, or Tsing Hai; and he says the buried cities proper are at a distance many marches East of Khotan. Turner in his Embassy to Thibet (French translation, Vol. II, page 50,) says, that a knowledge of Egpyt existed anciently in Thibet, and as it is probable that the knowledge was reciprocal, it is all the more conclusive to the non existence of the Chinese empire in ancient times, as Thibet is so close to China.

That the Chinese in ancient times knew of Bactria and consequently would have been known to the Bactrians is evident from the fact of a trade route existing anciently between China and that country.

The Chinese notices of this trade seem to indicate a route from Sze-chuen to Bactria, and this *probably*, (according to Colonel Yule in his introductory essay to Capt Gills "River of the golden sand" page 40) passed through Thibet. He contrasts these notices with a remarkable passage of the Periplus of the 1st century A.D. which speaks of Thin, and of its great city "Thinœ from which raw silk, and silk thread, and "silk stuffs, were brought overland through 'Bactria "to Bary-gaza (Bhroch) and with the statement of Ptolemy a century later, who says that there was a road from the countries of the Seres and Sinœ to Bactriana by the stone tower (*i.e.*, by Kashgar and Pamir).

In Sossnoffsky's Expedition to China 1874–75 (see R. G. S. Journal, as above) he states;—

"The desert of Gobi is far from being a wretched "desert where nothing but privations and miseries "await us. Water lies close to the surface. Near such "springs, and in the Mountain valleys, is found under "foot grass not only for camels but for horses. In "places a mantle of vegetation extends for consid- "erable distance, affording browsing ground for herds "of wild animals, camels, asses &c. After eight days "march we reach the fertile of oasis of Khamil." It

thus appears that the communication between Eastern Bactria and China is even now far from difficult, and considering the action of the shifting sands in Gobi which destroyed the cities mentioned, in the 6th century A.D., the communications must have been much easier in preceding times B.C.

Gaubil in his Traité sur la chronologie Chinoise, page VIII, writes, in confirmation of this;—

"When Alexander the great was in India and "Bactria, he could have easily had some knowledge "of China. In his time there were merchants in "Khorassan and in the country of Samarcand and "Bokhara who carried on a commerce in several articles "of China; at least this is very probable." At page 37, op: "cit: Gaubil writes, "Abdallah (a Persian author) in his "version of the abridgment of Chinese history, speaks "of Tsao-fu of the time of Wu-wang B.C. 1001, and "says that he travelled as far as Persia." So that the communication between Eastern Asia and China is admitted by the Chinese themselves, and the absence of all mention of China in ancient histories of Asia and Egypt is thus all the more remarkable.

There has been also great stress laid by some of the mentioned writers who are upholders of the Chinese chronology, on the coincidence of certain eclipses mentioned in Chinese books, at chronological dates with the ascertained occurrence of the same at similar dates in other chronologies, as proved by astronomical computations. This question will also come under consideration

in the present researches; more however by quoting and comparing the opinions of the learned writers on the subject, than by any professional astronomical discussion of the events involved in it; and merely to point out that the conclusion, drawn from the circumstances of the eclipses mentioned in Chinese books, in favor of this ancient chronology, by such writers, is wrong and unsustainable.

With this total absence of external testimony, it is therefore only in the literature of China that internal evidence is to be sought, for the truth of its chronology, and the internal evidence which is therefore alone available in the question, has been recently re-examined, chiefly by the light of the former researches of the Jesuits and other writers that were published in the last century; and the cause of Chinese chronology has been zealously upheld by modern authors of historical works, such as Leon Carre in "L'ancient Orient," by Maspero in "Histoire des peuples de l'orient," and by Barton in "The Ancient World," who all maintain its authenticity, and even extol its usefulness in completing our knowledge of the early times of the human race. Dr. Schlegel in his "Uranographie Chinoise" also persistently upholds the truth of Chinese chronology, and asserts that it goes further back than the most enthusiastic Chinese themselves say. He places the Emperor Yao at 16J16 years B.C. op: cit: page 30. Baron Richtofen in his "China," Berlin, 1877, strongly advocates the antiquity of the Chinese chronology.

There is no intention in the present researches to enter into any comparative discussion on Chinese chronology in its supposed relation to that of the Holy Scriptures, whether according to the Vulgate, the Septuagint, or the Samaritan computation. As has been well observed by Sylvestre de Sacy, quoted by Lenormant Vol. 1, page 53, of his "Prémiéres Civilisations" there is no such a thing as Bible chronology of any dogmatic value; and though it may have been deemed expedient by the Catholic missionaries in China to endeavour to reconcile the Chinese chronological system with the history of the duration of the world that Christianity has adopted as reasonable, in order not to hurt the feelings of the Chinese whom they converted to the faith ; there is no need now for pursuing such a course, nor of entering into any discussion on the special merits of that question, nor even of alluding to it, beyond by cursorily introducing the different opinions on the subject, for the sake of reference and for completing this treatise.

Neither is it intended to notice, further than it may serve to generally illustrate the question in hand, the evidently fabulous and fictitious chronology of the long periods before the times of those personages in Chinese history such as Fu-hi, and others who are generally recognised as belonging to the earliest possible epochs of Chinese national existence. It is not intended either to endeavour to elaborate or establish any system of chronology for elucidating Chinese history.

The present part of the researches has merely for its object the examination of Chinese chronology, and the Chinese cycles by which it is calculated; though the essential connexion between the planetary basis for computation of time, and its adaptation to record the times passed in the life of nations, has necessitated an examination also of the historical aspect of the general and astronomical questions involved in the same.

In the second part of the researches the persons and events mentioned in Chinese history will form a special subject of enquiry.

The third part will contain researches on the civilisation, the cultus and the religion of the Chinese, and the fourth part will be devoted to the literature, the written character, and the language of the Chinese.

It is obvious that the object of these researches i not now approached for the first time; and naturally the opinions of the authors already mentioned, for and against the credibility of Chinese chronology, will be noticed and will form a prominent part in the analysis of its merits; so that much of the work which will now appear will have been already published, though it is presented here in another form.

Chapter II.

The origin and source, and the method of the Chinese System of Chronology.

IT is generally admitted that the first appearance of any system of chronology in China dates from the time of Sze-ma-ts'ien, who in his work called the Sse-ki, or historical records, composed about the year 91 B.C., during the reign of the emperor Wu-ti, the fourth sovereign of the Han Dynasty, compiled an elaborate scheme of ancient Chinese history, and arranged the periods of the most celebrated personages and principal events belonging to it, with chronological dates assigned to each of them. Mayers C. R. M. page 258, under the head of Wu-ti, states ;— "In B.C. 104, a change of calendar in accordance with the calculations of Sze-ma-ts'ien was introduced and forms the epoch with which the modern period of Chinese chronology begins."

There are various opinions as to the merits of Sze-ma ts'ien, as an historian, and chronologist. Remusat relates that by several of the Jesuit missionaries in

China he was entitled the Herodotus of that country. De Mailla in Vol. I, of "l'histore générale de la Chine," Preface, page XVIII, calls him "the restorer of history." Premare in "discours preliminaire" prefixed to the French translation of the Shoo-king calls Sze-ma-tsien "An ingenious and polished author but who is not so reliable as is thought," and at page LVI, of same, he writes "This writer passes amongst the best Chinese critics as a liar." Pere Premare in his "Vestiges &c., page 23, says, "Under the Han dynasty, *i.e.*, after 200 " years of atrocious and continual wars, and after the " burning of the books and after the shipwreck of the " doctrine of the ancients, at last came Sze-ma-ts'ien, " Tso-ki'u-ming, K'ung-ngan-kwok, and Mao-chang, " and other similar innovators, who took on themselves " to forge systems in agreement with their passions, and " forced themselves wrongly to make the Shoo-king and " Shi-king, to appear in accordance with their histories. " It is true that they were refuted by the writers of the " following century, but these do not show themselves " more faithful than their predecessors."

Leaving aside however for the present the personal and literary character of Sze-ma-ts'ien, the question which naturally occupies one, is, what were the then existing sources available for the composition of his history and chronology?

Previous to Sze-ma-ts'ien there are said to have been the records of the different feudal or tribal states of China, and also some books called the books of Hia, or

those of the first Chinese dynasty known as Hia. These were probably a calendar of the Hia dynasty, an account of which has been described by Tae-ti in his collection known as the Ta-tae-ti. (See Wylie, at this name.) There are also the San-fen or the history of the San Hwang, or the three emperors Fuh-hi, Shen-Nung, and Hwangti, who are said to have reigned in China long before the Hia dynasty, and which book is supposed to have contained their instructions and the rules and mode of their government. There was also the *Wu tien*, which is said to have contained the history of the five sovereigns who came after Hwang-ti above mentioned, viz., Shao-hao, Chwan-Hü, Chih, Yao, and Shun, who immediately preceded the Hia dynasty; but the San-fen does not now exist, nor does any authenticated portion of the Wu tien exist either.

These were also the Pa So or the eight So, which treat on the eight Kwa or diagrams of Fu-hi, and the Kiu-Keou or the Nine Keou, which treat on the nine departments of the empire.

They are all known by their being mentioned by Tso K'iu-ming in his commentary on the Ch'un Ts'iu of Confucius, in which he says that the San-fen was the history of the three Hwangs, and that the Wu tien that of the five Ti.

Dr. Legge is of opinion that the "books of Hia" existed at the time of Confucius, but, it does not appear that either they or the other books mentioned above were extant at the time of Sze-ma-ts'ien, nor are

they reputed to have contained any chronological data of the passages whose history they are supposed narrate.

There was also the work of Yo-tze of about the time of Wen-wang and Wu-wang, but the only chronological statement which he makes is that the Shang dynasty, lasted 576 years, (see Gaubil, Chinese Chronology, page 65). There is only a fragment of Yo-tse which has been preserved and published by the Taoists.

Besides these books of uncertain existence there were the works of Confucius, who lived from 551 to 479 B.C. such as the Shoo-king, and the Shi-king, and the Y-king, that Confucius either explained or preserved, and the Ch'un T'sin. Dr. Legge, op: cit: page 20, writes, "The Shu-king itself does not supply "the means of laying down any scheme of chronology for the long period of time which it covers."

Gaubil in his "Chronologie Chinoise" page 52, writes, that "the Shoo-king neither gives the number of "the emperors of the Hia dynasty, nor the length of their "reigns, nor the total of the duration of that dynasty, nor "does it give the number of the emperors of the Shang "dynasty nor the total number of the years of their reigns, "and that it only gives the years of the reigns of some of "the emperors of the Chow dynasty." At page 85, Gaubil further states that according to what the Shi-king says, "neither the epoch of Hiou-tsi, the chief of the Chow "dynasty, nor that of Sie, the chief of the Shang dynasty can be determined." At page 91, when treating on the other works of Confucius, the Ta-hio, the Lun-

yu, and the Tchung Yung, he says "these books do not "give any fixed epoch of chronology, but they suppose "the history from Confucius as far back as Yao."

P. Premare in his "vestiges des principaux dogmes "Chretiens tirés des anciens livres, "Paris 1878, page 25, writes ;—

"The philosopher Meh Tsze, who lived in the 5th "century and a short time after Confucius, says this : "I have read the annals of all the reigns, and these "books are not what is now called the Ch'un T'siu." He adds "it is certain that this book no longer exists "unless it be in the pages of the three commentators, who "reproduce, I do not know which text, and each in a "different manner, and which they each explain in "their own fashion. Thus Yen tchong see, (who lived "179, 163 B.C. under the Hans, (early) with several "others, states with reason ; "The three glosses have "made the books Ch'un Ts'iu entirely disappear, and "Lieou-tchi-ki, who lived under the Tangs, 618-907 "A.D. and who is the author of the Chi-toung-soui-ouay, "does not hesitate in affirming that the Ch'un T'siu "and the Shoo king first appeared at the same time as "the commentaries."

Gaubil, "traite de la chronologie Chinoise" page 81, writes of the Y-king that "the different parts which "compose this book do not give any fixed chronology. "Not that there have not been Chinese who pretended "that they found a chronology in the Y-king, and "even in the eight kwa, but there is no foundation to be

"made in these Chinese systems of chronology which "are based on the Y-king, for those persons have made "an Y-king according to their own fashion."

There were also the works of Mencius who lived from 372 to 289, BC.; but the works of these two celebrated authors contained no general chronology of China; though Confucius sketches the successive events of ancient times without assigning dates to them, and Mencius merely gives in his book II, cap. XIII, part 4. (see life and works of Mencius by Dr. Legge, London, 1875, page 194), a general sketch of the duration of the Chinese empire, by stating that from his own time to that in which Wên-wang and Wu-wang, (the reputed founder of the Chow dynasty) flourished, there were more than 700 years. In book VII, pt. II, chap. XXXVIII. 4, op: cit: page 38, he says from Wu-wang to the time of Ching Tang, the traditional founder of the Shang dynasty, there were about 500 years; and from the time of Ching Tang to that of Yao and Shun there was the same space of about 500 years.

It would hence appear that the Chinese had not at the time of Mencius any chronological era for the designation of years; and Mencius' way of calculating historical epochs was similar to that of Herodotus and Thucidides, "who both denote a series of years by "stating the interval beween the event in question and "their own lifetime, or by stating the interval "between the event in question and some other previous

"event, the time of which is assumed to be known;" (see Sir G. C. Lewis "An historical view of the astronomy of the ancients," London 1862, page 25.) and also to that of the Egyptian priests who reckoned time in a similar way, by saying that 900 years had elapsed between the death of king Meoeris and their own time; and also to that of the Syrian priests, who stated that 2300 years had elapsed since the foundation of Tyre to their day.

Mencius also gives in the same book the details of the time between Wên-wang and himself, in relation to the time of Confucius, as of about 500 years intervening between these two persons; and of about 100 years and more, from Confucius to his own time, or a slight discrepancy from his other account of the distribution of time.

Between the times of Mencius and Confucius and the beginning of the Tsin dynasty (259-210, B.C.), there had also been two authors called Chwang-tsze, a native of the state of Leang, also called Chwang-chow, circa B.C. 330, see Mayers (C. R. M. page 30) and Lieh-tsze or Lieh-yü Kow, "of the period immediately succeeding "that of Confucius" (see Mayers page 126). The work of Lieh-tsze is thus referred to by Sir John V. Day, C.E. F.R.S.E. in the "Prehistoric use of steel and iron," London 1877, page 182;—

"In the Kwang-hi tsi-tien or Kang-hi's dictionary "published about the year A.D. 1710, the author "quoting from the writings of Lieh-tsze, reports him as "saying that a red blade will cut jade as it would cut

"mud. It is evident that it is to the colour of temper-
"ing highly heated steel that Lieh-tsze alludes;" and at page 181, "that the celebrated author Leih-tsze about "400 B.C. was acquainted with the native process of mak-
"ing steel" and at page 183, "that the steel referred to "in the Shoo-king (Classics, Vol. III, 121), and in the "writings of Lieh-tsze, was produced by the same or by a "very similar process, which according to the *Pi-tan* is "described page 183; and at page 184. "We have pre-
"viously pointed out (page 134 ante) that Aristotle des-
"cribes the Greeks to have practised this identical process "about 400 B.C. We have then the solid fact of two "celebrated authors and philosophers, one in China and "the other in Greece who flourished simultaneously, but "utterly unknown to each other, describing a similar "method of making steel practised at the same "time in each country." It would appear, then, that there had been a certain communication between Lieh-tsze or his informants with Western nations about 400 years B.C. or shortly before the time of Alexander the Great.

There is also mention made by Chinese authors of the writers at the beginning of the Tsin dynasty, of the hundred schools; but it is uncertain who or what they were. Gaubil (in his treatise on Chinese chronology page 120) mentions the Chi-pen or book of genealogies, and the Chow-pey, which are supposed to have been written towards the end of the Chow dynasty, and, (at page 133), he says that Sze-ma-ts'ien seems to

have made use of two books called the Kia-yu, and the Tae-ti, which were composed shortly before his time. These and the above mentioned books were all the known available works for history and chronology at the end of the 3rd century B.C. Between that period and the time of Sze-ma-tsien there was also another author called Kia I, who was privy counsellor to Han wen-ti B.C. 178, (according to Mayers, page 78,) of whom De Mailla writes loc: cit: page XVIII. "Kia-y "busied himself in gathering all the memoirs that he "could recover about Tsin Shi hwangti and his dynasty "that had lasted so short a time. He composed a history "from them, which he hastened to publish before the "Sse-ki of Sze ma tsien appeared. It was well received "by the public." Neither of these books however profess to give a chronology of the Chinese empire.

Shortly after that, and at the time of the founder of the Tsin dynasty, She hwangti, who lived from 259 to 210, B.C. there occurred what is termed in Chinese history the burning of the books, which took place by that Sovereign's orders; and if there were any chronological works extent at the time of that event, and which had been composed since the death of Confucius and Mencius, they are all supposed to have perished, with the exception of a book known as the Bamboo annals, which however did not come to light until long after Sze-ma-ts'ien's time, (at 265. A.D.) when it was said to have been discovered in the ruins of an ancient tomb of one of the Wei princes. Wylie (Notes on Chinese Literature, page 19,) says of

this book;—"The original work is considered to havebeen " long lost, and the one now known by that name, there " is good ground for believing to be a fabrication."

To understand therefore the position of the means thus posessed by the Chinese for ascertaining the foundations of their chronology, from the burning of the books to the time of Sze-ma-ts'ien, it is necessary to go back to the period enveloping the persons and occurrences just mentioned, and endeavour to realise not only what were the extant Chinese records and other Chinese writings at that time, but also the circumstances surrounding them.

The sovereign She hwang-ti already mentioned, and who was previously one of the princes of the state of Tsin, had by boldness and great intelligence, managed to overturn the Chow dynasty of China under whose dominion he had been a feudal ruler, and he established himself, B.C. 221, in the place of the overturned sovereign, as emperor of the whole of China as it was then known, and which far from being the populous empire that it is at present, is supposed to have contained about ten millions of inhabitants, according to Sacharoff, "The Rise and fall of the Chinese population," by T. Sacharoff, member of the imperial Russian embassy at Peking; translated into English by Rev. Wm Lobscheid, Hongkong, 1862, page 9, who says, "From the foun- " dation of the empire to the accession of the Han " dynasty, four censuses are quoted by later historians, " giving for the various epochs an average number of

"scarcely more than ten million individuals" and this is not astonishing, for the same author also states on the same page, "During the Chow dynasty, when "the empire had already attained some stability, "only half, *i.e.* one third part of modern China was "inhabited; and even this scanty population was very "unequally distributed."

This statement about the population, so disproportionate to the present number of the inhabitants of China, is not quoted to show the improbability of there having been anciently an important empire of China. It is a question whether any of the great empires of antiquity surpassed ten millions of native population, exclusive of tributary peoples; but the area of their dominions compared with that of China was small, and to make out that the China of the Chows or of the Shangs or Hias was a great empire, it would require a much larger population than ten millions to make it come up to the standard of importance that Chinese historians ascribe to it.

Without enquiring narrowly into the ethnological origin of the Tsin state of which She hwang-ti had been the ruler under the name of Cheng, it is at least evident that this sovereign had ideas and habits entirely opposed to those which are supposed to have been prevalent among the Chinese at his time; and which, as he could not have learned from them, he must have acquired from some other, and probably a foreign source. His luxury and grandeur, it is said, caused great

discontent, as being unlike the conduct of the ancient sovereigns of China; and it would almost appear from this, that he was not of Chinese origin, but that he came from some of the western nations whose manners and civilisation were more advanced than the simple ways of the Chinese, who it is said, were scandalised at his extravagance in thought and action.

The state of Tsin, of which She hwang-ti came, is thus described by Pauthier (Memoires Sur l'antiquité, de l'histoire et de la civilisation Chinoise, Paris 1868, "page 10.) "This state of Tsin is also the one which "was the nearest to the other states of Western "Asia, and with which it had the earliest and most "ancient relations;" and this relation of the Tsin state with Western Asia throws some light on the means that had been at the disposal of She hwang-ti for obtaining an ample knowledge of affairs outside those of China and of its usages. De Guignes (Histoire des Huns Vol. 1, page 18-19,) gives the following graphic description of this celebrated sovereign;—"He was so fortunate in his "wars that he became absolute sovereign of nearly all "China. This prince by his vast genius, which embraced "all that was grand and magnificent, placed himself "above all the too minutious laws of the Chinese, and "he despised their prejudices.

"He changed the face of the whole empire,—His taste "for public works made him do prodigious things which "can be favorably compared with the grand works of "Egypt. Many objects which were in brouze, and others

"in gold, were of such weight, that some of his successors "deemed it a considerable task to remove them from "one city to another. These statues and other monu- "ments were destined to adorn the superb palace that "he had built at Si-gan-fu, his capital. The Chinese, "astonished at such magnificence, unanimously raised "their voices and represented to him the simplicity of "their ancestors; on all sides they only spoke of the "precepts left in the ancient books; and a mass of "examples was brought forward of princes who had "conducted themselves differently, and who did not "oppress the people by burdens such as was done under "his reign. The monarch, in a fit of irritation, in order "to destroy the remembrance of these ancient sovereigns "who were quoted continually by the learned as a "reproach to his pomp, resolved to burn all the books."

It will be observed from the above extract, that De Guignes assigns as a motive why She hwang-ti ordered the ancient books of China to be burnt, that it was caused by the contrast, drawn by certain persons amongst his new subjects, between his conduct and that of the supposed ancient sovereigns of China recorded in the Shoo-king and other Chinese books; from which circumstance his antipathy was enkindled against these books for condemning his ways; and that it was to get rid of this condemnation in Chinese eyes of his own style of life, that he issued the edict for their destruction.

Père Premare in a letter of A.D. 1724, in Vol. 33, of the "Lettres edifiantes," gives another reason for She

hwang-ti destroying the books. "The learned men of "that time could not endure a king who desired to be "absolute, and they made a bad use of the Shoo-king "and had unceasingly on their lips the example of Ching "Tang, who overthrew the infamous Kie, and of Wu "Wang who dethroned the rant, Chow sin. They thus "blew the fire of revolt on all sides, *and it was this which "made the new Monarch deprive the learned Chinese of those "books* which in their hands caused disturbance. Besides, "She hwang-ti in ordering the burning of the books had "only in view to maintain himself in possession of the "throne which he had obtained."

Pauthier, op: cit: page 32, gives another motive for She hwang-ti's destroying the ancient Chinese books, which he quotes from the Chinese historian of the Han dynasty, Pan Ku, (A.D. 92).

"The Tsin dynasty ordered the destruction of the "literary monuments by fire, *in order to render the black "heads, i.e. all the Chinese people, ignorant and stupid.*"

De Mailla, in his preface to the "Histoire générale de la Chine," page VIII, gives another reason for the burning of the books. "Tsin She hwang-ti, who after- "wards ordered the books to be burnt, had no intention "of sparing the Shoo-king, the morality of which blamed "his conduct so strongly; and he considered that *the "severity of the maxims contained in the books* were only "fit to perpetuate trouble, and that this *had been the "principle cause of the sanguinary wars by which the "empire had been so long wrent.*"

Freret, gives another reason for the burning of the books. at, Vol. XIII, page 223, although he writes at page 126, Vol. XIII, that "the motive of "it is unknown."

"Under the Chow dynasty, the empire being divided "amongst a great number of small sovereigns who all "sought to be independent; each of these princes in order "to distinguish himself from the others, not only refused "to adopt the written characters invented in the other "kingdom, but even wished to make changes in the "generally received characters so as to render them "peculiar to his own kingdom.

"The 540 characters of Ts'ang Hich, (the minister of "Hwang-ti) not being sufficient, Shun (the Emperor) had "ordered others to be formed. It happened that several "characters of very different form were destined to "express the same thing. The system of writing, owing "to this, became a species of cypher all the more difficult "to understand, as the rules of analogy not having been "observed, the meaning of one character could not lead "to the meaning of another."

At page 217, of same volume he had previously 'stated,' I derive this history of Chinese writing from "a letter from De Mailla to Etienne Sonciet of 1st "June, 1735, which has been communicated to me "by order of the writer." After having thus described the confusion existing among the states of China previous to the time of She hwang-ti, owing to each state having different modes of writing, he states Vol. XIII, page 228;—

"She hwang-ti thought that it would be proper to "abolish all these different species of writing, and to "establish the usage of characters common for all the "provinces, so that there should be no more need to "multiply transcripts of the same edict, in order to "render it intelligible to all those who ought to observe "it. He charged therefore his minister Li-sze with this "important work."

"While Li-sze was working at his new character, "Mêng T'ien, a general of the army of the empire, was "occupied in discovering some substance more convenient "for writing than the Bamboo tablets, upon which up to "that time the written characters were traced by a stick "dipped in varnish.

The attempts of of Mêng T'ien were not long without "result: after several essays he at last arrived at mak- "ing a coarse sort of paper, and all public documents "were copied on it with the Tsin-chuan, or writing "adopted by She hwang-ti. These characters of Li- "sze, (9353, in number) which are called the lesser "seal character, are preserved in the Shwoh-wen, by "Hü-shên."

"Li-sze ordered translations, or rather copies to be "made in his new style of written characters, of the books "of medicine, of divination, and of agriculture, and those "of the special history of the kingdom of Tsin, *i.e.* that of "the ancestors of the reigning family. He then obtained "an edict for the suppression of all the ancient books of "history and moral philosophy."

De Mailla op: cit. Vol. II, page 401, confirms this, in his narrative of Li-sze's famous discourse before his sovereign: "My advice would be that all the written characters be reduced to one system, and that every one should be obliged, under the most grievous penalties, to make use only of those which are used at the court of your Majesty. What a confusion it is to see in one state, at least seventy modes of writing? Is it not a sure means of keeping up the spirit of revolt?"

This motive for the destruction of the ancient books of China is curious enough, for it discloses a state of difference in writing existing in China which would naturally be a serious obstacle to anything like a national literature or chronology, and at the same time made it difficult for the provincial literature to become current amongst neighbouring states, and consequently impede, if it did not render impossible an imperial history being preserved uniformly, and revered by a universal body of learned men in the nation. Frérét (Vol. XIII, page 225,) ascribes a similar attempt to unify the Chinese written character to the eleventh sovereign of the Chao dynasty; and curiously enough through the same motives as those which moved She hwang-ti to do so. "Süan wang, who ascended the throne B.C. 827, and who "wished to reestablish subordination in the empire, "undertook to apply some remedy to the disorder that ex- "isted in the written character. He ordered the composi- "tion of a character, to which he gave the name of the Ta "chuan; and he commanded that it alone was to be used

" throughout the empire, but his orders were not obeyed, " and the tributary kings made it a point of their own " dignity to preserve the writing system that was special " to their own country. This version of the event now under consideration, shows that instead of She hwang-ti being an enemy of literature, as is generally supposed, he must have been disciplined in literary studies, and that he was of an elevated mind, to have been able to devise a plan for the unification of the Chinese written language; while on the other hand, the learned class of Chinese, who have been so much vaunted, had never even attempted to remedy the confusion which existed through the diversity of methods of writing. Freret aptly remarks on this state of things (XIII 251,) " one can easily imagine "that amidst the wars that had desolated all the provinces " of the empire, learning had been but little cultivated: " the diversity of written characters which were no longer " the same as soon as any one passed from one kingdom " to another, were a hindrance to copies of the same book " being largely distributed, as each copy could only be " read in a small extent of country. " All this would moreover lead to the inference that the different states of China had different national origins, as they possessed different forms of writing. This question however will be specially considered in part II, although it may serve to mention here, what Hornius, (" Arca Noe " page 440) writes on this subject. " It is sufficiently evident " from the diversity of bodily forms, of manners, and " of language, that the Chinese are not all of the

"same origin, but are a mixed race formed from various "peoples."

Pere Premare ("Discours preliminaire" to the French edition of the Shoo-king, translated by Gaubil, page xciv, in a note,) gives still another reason for the destruction of the books, which is even more interesting than those already stated; as it would show that the edict was a partial one even as regards the obnoxious books that are said to have displeased She hwang-ti. He states, "Li-sze was the minister of state under She hwang-ti. "It was he who counselled this prince, who was the "first to reign over all China, to order the burning of "the ancient books *because the literati made a bad use of* "*them.* I have read several works of this Li-sze which "are well written. Liu pu-wei, who was at the same "court, was very learned and polished. *It was not there-* "*fore out of hatred for the books,* but as a precautionary "measure, that the books were taken away from those "literary persons who were accused of preaching revolt. "Li-sze prentended that *in sound polities this sort"* "*of ancient works ought only to be in the library of the emperor.*"

There are thus several theories as to the motive for the destruction of the ancient books of China, by She hwang-ti; and they are all quite different enough from each other to throw discredit on the fact itself, or to greatly modify its importance. Those theories possibly are not altogether contradictory, but they are not all conspicuous in the narrative of the event as recorded in

Sze ma-tsien's history of the occurrence. The variety of opinion they present on this strange event, are moreover suggestive of a certain amount of conjecture having been used in forming them; and hence it may be permissible to offer some other reflexions on another probable cause of this celebrated occurrence, which rightly or otherwise has been made to do duty for explaining the paucity of literary and chronological works of the early times of China, by the statement that they had been destroyed by a tyrant.

It is curious to observe that this same event of the burning the books has been assigned as the cause of the Chinese losing also the knowledge of astronomy, and other things, which, amongst a civilized empire, such as China is presumed to have been in ancient times, could hardly have escaped from being preserved by oral tradition even had the written records of them disappeared.

It is said that the books on astrology were excepted from the edict for destroying the books; but considering the little practical differences between these two sciences, it is hardly to be admitted that the astronomical books were not also destroyed, unless it be urged that there were no astronomical books existing at that time. The Rev. George Costard, in his "History of astronomy" London 1767, remarks on this subject, "Astronomy, I "am afraid, originally owes its birth and progress to "astrology; and it ought to be made to appear that the "Chinese considered and treated the two sciences as "really distinct. But when the Jesuits tell us, that

" the Chinese suppose a mutual relation between the " actions of princes and subjects and the celestial " phenomena; and that it is in order to discover that " relation, that their astronomers have employed all " their pains, (Gaubil Histoire abregée de l'astronomie Chinoise, in Vol. II, page 31, of Souciets observations, mathematiques, Paris 1729, Vol. II, 31,) is it not the " same thing, as in other words, to declare, that the " two sciences were among them, as everywhere else, " confounded, and looked upon as one and the same." " The princes therefore who burned astronomical " books, burned likewise astrological books."

Gaubil, in his "Traité sur l'astronomie Chinoise," page 50, writes:

" To this burning is also referred, as well as to the " negligence of the Chinese towards the end of the " Chow dynasty, the loss of the secret of *Hi* and Ho, *i.e.* " of the astronomy of Hwang-ti, and of Yao, according to " those mathematicians appointed by the tribunal, and " called Hi and Ho. It is also stated that the secret of " the Chariot which was made use of to discover the " south, (*i.e.* the compass) and the method for knowing " the movements of the fixed stars, were also lost.

"At any rate it is stated with assurance, that from the " time of Yao to about the end of the Chow dynasty, " the Chinese know astronomy perfectly. Without " entering into an examination of this particular fact, " I have thought it my duty to gather up all that I " could find about this astronomy."

The concluding remarks of Gaubil in the above passage of his work, are suggestive that he did not attach full credence to all the consequences that have been supposed to have resulted from the action of She hwang-ti; and it also may be inferred, that the catastrophe has been equally exaggerated in other matters, as it is in this, for the purpose of explaining satisfactorily and advantageously to Chinese *amour propre*, their penury of knowledge.

It must be admitted that She hwang-ti was a man of great genius, and accustomed to a higher material and a more intelligent civilisation than that which the Chinese, whom he subdued, possessed at that time.

It is not too much to deduce from this circumstance in his character, that he was acquainted with the history and the national traditions of wherever he may have been educated; and certain circumstances point out that he was acquainted with those of Babylonia, which were current in Bactria at or shortly before his time. For instance, there are certain traces in the history of Babylonia, of similar destructions of books by its sovereigns, that might well have been taken by She hwang-ti, as examples for imitation.

Moses of Chorene, in his History of Armenia, chap 13 page 40, relates that "Ninus puffed up with pride and "avid of celebrity, caused many of the books and "histories of the times which had preceded him to be "burnt, in order that he and his reign should alone be "spoken of."

This passage is quoted by G. Schlegel, Uranographie Chinoise page 746, and is also mentioned by Volney Recherches nouvelles sur l'histoire ancienne, II, 46.

Another sovereign of Babylonia, Nabonassar, is recorded to have also acted in a similar manner.

Berosus—apud Josephus (see Cory's ancient fragments page 36) states—

"Nabonassar collected all the mementos of the kings "prior to himself, and destroyed them, that the enumer- "ation of the Chaldean kings might commence with "him."

Judging from the coincidence between the actions and the motives of Nabonassar, and She hwang-ti, it might be inferred at first sight that the latter had imitated the example of the Chaldean Monarch, or at least that he knew of its occurrence and mention in Babylonian history just as Nabonassar seems to have known and imitated his predecessor Ninus.

Rawlinson, (The 5 great monarchies Vol. III, page "38), thus describes the event. Nabonassar destroyed "the acts of the kings who had preceded him, and the "result was, that the year of his accession (747 B.C.) "became almost necessarily the era from which subsequent events had to be dated."

She hwang-ti was not quite so successful as Nabonassar, in his action for carrying out his project, though his motives were almost identical; for the era of Nabonassar lasted for a long period, though it appears to have been used only for astronomical purposes; (see Sir G. C. Lewis

op : cit : page 27,) while that of the Chinese monarch hardly survived him.

This circumstance of burning books occurs also amongst the traditions of the Chorasmians or Khwarismiams. Albiruni op : cit : page 58, styles them, "a "branch of the great tree of the Persian nation," and says that "Kutaiba killed their learned men and priests, "and burnt their books and writings, and they thus "became entirely illiterate."

There is also a tradition that Alexander the Great also burned the books of the Persians. Albiruni op : cit : page 127, writes of the chronology of the Sâsânians and Ashgânians that at the period of the latter, the Persian "empire was disorganised, and people were prevented by "various circumstances from preserving their chrono-"logy. Such were the calamities which Alexander and "his Greek Lieutenants brought upon them ; further the "conflagration of all the literature in which people "delighted. And more than that, Alexander burned the "greater part of their religious code."

It may be remarked that at She hwang-ti's time, hardly a hundred years had elapsed since Alexander the Great had done this; and the remembrance of it must have been still vivid throughout Eastern Asia.

Mr. W. F. Mayers in an article in the Journal of the North China branch of the Royal Asiatic society for 1867 (December) page 162, on Chinese Chronologyical tables," describes the conduct and motives of She hwang-ti, which so much resembles the narrative

of Nabonassar, given by Berosus, (as above) that on reading it the inference presses itself for admission, that the history of this portion of the life of She hwang-ti is either a Chinese version of the Babylonian incident, or that She hwang-ti was fully aware of it; as the coincidence of such a strange action on the fact of two sovereigns of different countries, forbids an independent origin of both events, and it can hardly be accounted for by the theory of history repeating itself. Mr. Mayers remarks; "one of his first decrees (She hwang-ti) as "recorded in history, ordained the abolition of the use "of post-humous titles, declaring it his pleasure that "he should be known simply as She hwang-ti, the "first emperor; and thus all successive generations "should be distinguished numerically as the second "generation, the third generation, and thus onward to "the ten thousandth."

Nabonassar, according to Berosus, destroyed the historical records of Babylonia "in order that the "enumeration of the Chaldean kings might commence "with him" just as Ninus before him had done the same "in order that he and his reign should be alone spoken of;" and if these narratives are compared with what Mr. Mayers states, the very same motives which impelled the Babylonian sovereigns to destroy all records of previous kings, appear to have actuated She hwang-ti, in endeavouring by his destruction of Chinese history, to be thought the first emperor of China, as Ninus and Nabonassar had wished to do with regard to the Chaldeans.

There is another incident in which She hwang-ti seems to have followed the example of one of the Babylonian Monarchs, Nabuchodonosor, who was nearer in time to him than Nabonassar; by building a more sumptuous royal palace than any of the preceding monarchs of China had done. Berosus, relates (Cory's ancient fragments, page 39.)—

"Nabuchodonosor added also a new palace to those "in which his forefathers had dwelt, adjoining them, "but exceeding them in height and splendour."

What Rawlinson (Vol. III, page 60,) writes of Nabuchodonosor and his character, and the renown accruing to Babylonia from his qualities, might be equally applied to She hwang-ti, who was famous for his warlike spirit, and his conquest of the Huns.

"Its military glory is due chiefly to him, while the "constructive energy which constitutes its especial "characteristic belongs to it still more markedly, through "his character and genius:" and he further says, "that "he possessed a grandeur of artistic conceptions, and "skill in construction, which place him on a par with "the greatest builders of antiquity.

"The emperor got built a palace worthy of himself. "The ancient palace was to the South of the *Oue choui:* "he constructed the new one to the north of this "river. There was never any thing more magnificent "nor more vast. Gold, silver, and ebony were prodigally "used inside and outside the apartment of the prin-"cesses, and the wives of the kings, whom he had

" vanquished, and whom he had kept for himself. All " the buildings and the wings communicated by means " of covered galleries in the form of balconies."

Indeed it would not be a surprise if it were discovered that She hwangti got even the idea of building the great wall of China, with which he is usually credited, from the great wall of Nabuchodonosor, that he built round Babylon ; or from the Median wall for the defence of the province of Babylon, which cut off the country between the Tigris and Euphrates ; and which is described by Xenophon, who saw it, as built of baked bricks cemented with asphalt, and as 20 feet in thickness, 100 feet in height, and 20 parasangs (75 miles) in length. (Anabasis II. 4, 12.) Rawlinson op: cit: page 56, writes "He (Nabuchodonosor) built the great wall of "Babylon, which according to the lowest estimate must "have contained more than 500,000,000 square feet of "solid masonry, and must have required three or four "times that number of bricks:" and in a note, same page, he writes, "Taking the height of the wall; that is, at "75 feet, its width at 32 feet, and its circumference at "365 stades, the measurements of Herodotus would "raise the cubical contents to more than 5,400,000,000 "feet."

There is a question whether the great wall of China existed in the time ascribed to She hwangti, or even whether it was really built by him. De Mailla (Histoire generale de la Chine Vol. II. page 373,) writes, all that She hwangti did was, "He closed the passes of Long-si of

"Peti and of Chang-kien, by which the Tartars might "penetrate into China. The princes of Tchao and Yen, "following his example, contructed walls;" and the editor in a note, page 374, adds; "It is seen by this history, that "all that great work has been wrongly attributed to the "Emperor She hwangti." Should it appear that he was not its constructor, there would be all the more reason to hold that this history may be a Chinese version of a chapter in Babylonian history, and could it be even established that he did actually build the great wall, it is more than probable, considering his other imitations of events in Babylonia, that also he derived the idea of doing so, from the history of Nabuchodonosor, the Chaldean Monarch.

There is a tradition in Central Asia, that a wall resembling in many circumstances to that attributed to She hwangti, was built by Alexander the Great. George Hornius in his "Arca Noe," writes;

"The Nubian Geographer, mentions this wall, part IX. "clim : VI, and calls it the mound of the Gog and "Magog, and is of the opinion that it was built by "Alexander the Great."

Albiruni, (Sachau's translation, 1879, London, page 43) writes of Dhu Alkarnaini, whom he thinks was a Yaman prince, but whom others think was Alexander, as follows :—"He is generally assumed to have entered "the darkness of the north, to have seen the remotest "frontiers of the inhabitable world, to have fought "both against men and demons, to have passed between

"Gog and Magog, so as to cut off their communication; to "have marched out towards the countries adjoining their "territory in the north and east, to have restrained and "repelled their mischievous inroads *by means of a wall* "constructed in a mountain pass, whence they used to "pour forth":—and at page 44, when narrating the traditions identifying Dhu Alkarnaini with Alexander the Great, states; "Alexander took possession of the Persian "empire. Then he went to India and China, making "war upon the most distant nations, and subduing all "the tracts of country through which he passed."

Supposing however that Dhu Alkarnaini be not Alexander, but a prince of Yaman, Albiruni still couples the traditions of the construction of a great wall in ancient times, with this personage. "As to the rampart "which he constructed between the two walls, it must "be stated that the wording of the Coran does not "indicate its geographical situation. We learn how-"ever from the geographical work, that this nation, viz, "Yajuj and Mâjûj:—(Gog and Magog) are a tribe of "the Eastern Turks."

He then mentions two reports about this wall, and adds:—"From these two reports it is evident that the rampart must be situated in the north-west quarter of the inhabitable earth."

He at the same time remarks that, "there is some-"thing which renders the authenticity of the latter report "doubtful, viz., the description of the inhabitants of that "country, that they are Muslims and speak Arabic;"

whereas Albirnni says, "we know of no other Muslim "nation which is separated from the territory of Islam "except the Bulgar and the Saivar."

As the only object of introducing this quotation from Albiruni, is to show the existence of ancient traditions of a wall having been built in north west of Asia, by some great monarch, before the time of She hwang-ti, it is not necessary to treat the question of the personage connected with this, historically; as any way the tradition of the fact remains the some.

She hwang-ti, from all this, probably must have also possessed the capability and the habit of considering and discerning the merits of national narratives, such as these; in which most oriental peoples have recounted the deeds and names of their ancestors, and the times in whey they were supposed to have lived.

Hornius, op: cit: page 440, places the birth of She hwang-ti, at B.C. 246, and remarks that it was about the time in which the Parthians and Indians and Bactrians rebelled against the Macedonians; a time which he styles fatal to Eastern Asia, but which was the origin of the greatest empires. If it he true, as it has been surmised, that the Bactrian traditions found their way into China, at or even before the breaking up of the Greek Bactrian kingdom, it is not to be wondered at, that the tradition of the great wall, which was believed by the Bactrians to have been built by Alexander, should have also gone to China, and have been attributed to She hwang-ti as another means of his glorification. As Hornius remarks,

page 442 ; She hwang-ti united the different sovereignties existing in China, and made them all into one empire, much the same as Cyrus did with the Persian, and Alexander and Seleucus did with the Macedonian empire. Doubtless She hwang-ti with his knowledge of previous history had their example before his mind. Baldwin in "Prehistoric nations" New York, 1875, page 167, quotes Vambery "Travels in Central Asia" who "saw the remains of great wall east of the Caspian in Bactria, the bricks of which are like those at Balkh, and he says, Vambery reports, abundant ruins in that part "of Central Asia extending to China."

The religion of She hwang-ti has also the appearance of being derived from foreign sources; probably from Babylonia or from Egypt.

Mr. Mayers, C.R.M., page 337, gives a list of "The "eight gods to whom sacrifices were offered by She hwang-ti," thus denoting that this was the peculiar worship of that monarch.

In "notes and queries for China and Japan" Vol, 1868, page 141, a question was asked as to what these eight gods were, and a reply to this question occurs in same volume, page 189, from the pen of the late lamented Mr. Mayers.

"Wu-ti, of the Han dynasty, when worshipping at "the Chung-yoh mountain, was led to offer worship to "the eight gods (pa-shin) but in this he was but the "imitator of She hwang-ti, who on occasion of his "solemn dedication of the Tai mountain in Shantung,

"offered sacrifices to the eight gods, who are called the "eight gods of the hills and rivers. No means exist of "ascertaining upon what grounds the historian Sze-"ma-ts'ien assigns to the eight gods, the names which "he sets forth in the historical records; and it must be "left to others to decide whether the deities in question "can be identified with those of whom traces are still "discernible in the Shoo-king. The alternative possibi-"lity remains of their having been adopted by She "hwang-ti from the Hindoo pantheon, of which, it is "by no means out of the question, a fragmentary "knowledge may have reached China during his "reign."

Possibly the following quotation from the old Egyptian Chronicle, (Corys ancient fragments, page 90), "The demi-gods, in number eight, who reigned 217 "years" may throw some light on this worshipping eight gods, by She hwang-ti, as it thereby evident, this octonary series of divinities was known in Egypt, and it is probable that the Egyptians derived the practice of the worship of these divinities from the ancient Babylonians.

There were also eight gods in the Babylonian pantheon, as mentioned in "Duncker's "History of antiquity" Vol. I, and the description of the Chinese eight gods, given by Mr. Mayers, loc: cit: may possibly assist in affording a clearer knowledge of the Babylonian and Egyptian worship of this peculiar category of divinities, which seems to have been the special cult of

She hwang-ti, and which had not been practised by the predecessors.

It may not perhaps be out of place here, to suggest, that these eight genii were the deified eight ancestors of the human race after the deluge, viz. Noah and his wife, and their three sons with their three wives. The tradition af the Deluge was rife in Babylonia ; but it is not so clear that the knowledge of it, and of the eight ancestors of mankind, was generally known in China, before She hwang-ti's time. This incident may throw some further light on the subject of She hwang-ti's education.

That She hwang-ti was not specially familiar with the records of the peoples living in the country now called China, and who according to the accounts of the modern Chinese themselves, had been existing in several tribes, continually at war with each other, for some hundreds of years before he subdued them, and united them into one nation, is also more than probable, The fact of his acting as though the usual impression produced in men's minds by listening to or reading the historical records of those who have preceded them, had never taken root in his mind as regards China ; shows that the records of China were either not known to him, or not looked upon by him as containing a true picture of the past, as far as the training of his own early life was concerned ; and could it be proved that these records were acknowledged by him as the received history of the tribes living in China, and the legendary beginnings of

their race, such as are usually placed at the head of all such oriental histories; it would not follow that they were acknowledged by him as faithful, or true descriptions of the past, so far as the dwellers in China were concerned.

Besides this, there is the intrinsic question for consideration, whether the historical books of China as they then existed, did really describe the Chinese as they are represented in the works which now pass current as substitutes for those which She hwang-ti ordered to be destroyed. But supposing for the sake of argument, that the present books are identical with those which are said to have been burnt; the originals with their imaginary and fabulous tinge about them, that is visible even now; were such as an intelligent and grand sovereign, like She hwangti, would naturally wish to eradicate from a people, whom he had to govern and instruct, according to the ideas which he deemed to be right and true. The question therefore presents itself, whether She hwang-ti did not order the destruction of the books, *because he knew them to be untrue as histories of China*, or at least to be Chinese distorted appropriations, of the histories of other countries.

The Chinese version of the affair, and the harangue of Li-sze, his minister, urging him to this severe measure, when closely examined, are not opposed to this view of the motives for the event.

The narrative of the circumstances attending the edict for destroying the books, is to be found in the Sse

ki of Sze-ma-ts'ien, of which a part translation is given by Pauthier, in the work already mentioned ; and also by Dr. Legge in his prologomena, to Vol. I, and page 6 to 15 of the Chinese classics. The translation of Pauthier will be followed here, as he quotes the narrative chiefly for supporting the antiquity of Chinese history, whereas Dr. Legge does not take so favorable a view of the question. The whole affair is thus described by Pauthier op : cit : page 6:—"At the court which She hwangti held " in the palace of Hien-yang, or of all the superior " perfections gathered together, "at Si-gan-fu, B.C. 213, " certain persons were assembled to pay their homage and respects to him. Amongst them, according to Pauthier's version, there were seventy the of most learnedmen of the empire: exactly the same number of the disciples of Confucius, according to the Chinese historian Pan-koo, mentioned by Pauthier, op: cit : page 31. One of the sovereign's own intimate friends, Chow tsing-chen, who held an important post in his army, and who was also a minister of state, and who doubtless was from the state whence She himself had come to subdue the several previous rulers in China ; concluded a landatory address to the new monarch, by specially pointing out his wisdom, in changing the feudal semiindependent principalities, into provinces of the new empire ; and by declaring that from the " furthest antiquity, no sovereign had reached the " height of the eminent talents and virtues of your " majesty."

According to the received historical theory of the Chinese, the state of Tsin had been a conspicuous member of the Chow empire, and the princes of that state, had descended from the family of the first emperors of China.

Gou-lai, or Ou-lai, the ancestor of the Tsin tribe, according to De Guignes, Histoire des Huns, Vol. i, page 140, descended from the emperor Chwan hü, by Peh I, who on account of the services which he had rendered to Yü in draining off the waters that had inundated China, received the family name of Ing.

One of his descendants named Gou-lai, was the father of Hiu-fang, who begot Pan-chao, the father of Ta-ki who had for son Ta-lo. Fitsu, the son of the last named, was the first prince of Tsin. The general history of the empire as contained in the Shoo-king, must therefore have been as well known to the literary persons of the state of Tsin, just as they were known by those of Thsi, whose representative spoke and discussed the question at that court meeting; and thus, this book would have naturally been familiar to the educated persons of the Tsin state, and these would have known all about the supreme greatness of Yao and Shun, had the history containing the description of their exalted merits, been known to them as true. And yet this officer of importance, and presumedly of education, did not hesitate to declare that She hwang-ti was the greatest sovereign whom he know of, when compared with those of ancient times. He seems to have been well

acquainted with history; for he speaks with confidence and certitude about antiquity; and his testimony on this subject, is as credible as that of any other person who was in the assemblage. It appears strange that this assertion of Chow-tsing-chen, which challenged the cardinal point of Chinese veneration for Yao, and Shun, and Yu, was not contradicted on the spot, if it could have been proved to be false; but the next speaker in the debate, who was of the state of Thsi, named Chun-yu-yueh, and who according to Mayers (C.R.M. page 123) was "minister of learning," merely remarks in reply to what had been stated, that he had heard it *said*, without mentioning that he had *read* it, in the Shoo-king, or other books, that the sovereigns of the Shang and Chow dynasties (he does not mention the preceding Hia dynasty, nor the typical sovereigns of China, Yao, and Shun) for more than one thousand years had advanced all their relations and their ministers to posts of territorial command, and that as She hwang-ti did not promote his children and youngest brothers in a similar manner, he would not have their support,—such as the former sovereigns derived from their own relatives; and that it had never been heard of by him, that a system of government which was not modeled on ancient customs could last long.

This assertion of Yueh was not consistent with the received history of the Chow dynasty, for it had not copied all the usages of the preceding Shang line of

sovereigns, and yet it is said to have given a long existence to its own usages.

Neither does the Chow dynasty history support the assertion of Yueh. In Section 5 page 196, Wu wang, in ordering his government, "divided the territory accord-"ing to three classes; appointing officers, he fixed on "*men of talent*" and in Section 9 page 221, "The "great announcement," it is stated; "Wu wang's "brilliant dynasty rose to eminence through the aid of "*clever men*, and by means of the ten individuals who "knew and followed the leadings of the supreme rulers' "decree."

In Section 6 of the books of Chow, page 223, it is stated, that Ching wang, of that dynasty, appointed the count of Wei, who was a prince of the dethroned Shang family, to be "an arch duke to rule over the "eastern territory of Hea."

Even Wu wang, Section XI. "the announcement to Khang, "when appointing his younger brother Fung "to the eastern region, told him, (see page 232) "You "man Fung, consider that the decree is not invariable. "Let me not cut you off from the promotion you enjoy" and in Section XIII. "the good material," Wu wang tells this same Fung, (page 239) that "the former "kings established inspectors for stilling insurrec-"tions" and the commentary here notes, "Fung himself "was an inspector: no mention is made that the "former kings appointed their own families to these "posts."

In the 5th book of Chow, Section III, "The numerous officers" page 257; "Heaven then directed your "first ancestor, Ching-tang, to supersede Hea, who then "employed *talented men*, to regulate the four quarters "of the empire."

Section 6, page 273, Ching wang, appoints Hoo as "earl in the eastern regions, and sends him to govern "the district to which he is appointed."

Section 8, "The establishment of government" specially instructs Ching wang, in employing *men of talent as superiors of the empire;* and on page 282, it states that the "rulers of Hea followed out this plan" and that the Hea dynasty perished for neglecting this plan. That the Shang dynasty in Thangs time (page 283) "appointed only the capable," and that "the Shang "dynasty perished for not following this rule."

Then we come to page 284, "Wen wang and "Woo wang clearly perceived *the talents of clever men,* "*so as to employ them* by appointing them *as superiors* "*over the people.*"

Besides this there is a discrepancy between the above narrative and what De Mailla (Histoire generale de la Chine, Vol, II, page 394), gives as the true history of She hwang-ti. The question of appointing members of She hwang-ti's family to places of authority and government, had been settled in a council of the most important persons in the state, B.C. 221, or eight years before the meeting at Hiu-yang; and doubtless, Chun yu-yueh, who was one of the ministers

of state in the council, had concurred in the proceeding.

It had been decided by them that this should not be done in future. "The minister, Wen Ouang, and seve-
"ral grandees, thought that it would be advantageous to
"the emperor to establish princes of his own family in
"the states of Yen, and Tsi, and Tchao, and Tchou,
"in order to keep the people in obedience. The
"council charged with examining this important affair
"rendered the following decision;"

"Wen wang, and Wu wang, of the Chow dynasty,
"established their sons and brothers as princes of
"different provinces, to keep the people in obedience
"and submission, but in the suite, the bonds of kindred
"becoming enfeebled, envy, jealousy and enmity
"between them increased to such a point, that they
"tore each other by continual wars that the emperor
"could never see the end of."

"Now that the empire is reunited under the glorious
"government of your majesty, the advice of your
"council is, that *you do not establish any one of your*
"*own family in the principalities.*"

"The emperor replied, "That which my council has
"decided has been most wisely determined. Hence for-
"ward the empire shall be divided into thirty six
"provinces; (This recalls to mind a similar divison of the old Egyptian empire into 36 nomes), "each
"province shall have a viceroy, a governor, and a
"vice-governor. Those of my family who may be

" capable of being thus employed, may be admitted to " them."

Thus it would appear from De Maillas account of the affair, that instead of the old institutions about appointing princes of the sovereign family to posts as governors, having conduced to the Chow empire lasting long, this very custom was the cause of its coming to an end.

It is at least evident from the speech of Yueh, and also from the decision of the council above mentioned, that the Tsin prevailing traditions of government did not confirm the truth of the supposed ancient customs of the two dynasties, whose practise had been quoted as a guide for the settlement of the new Tsin dynasty in its government of all China; and it is questionable, from this very fact, whether these or similar customs had really existed among the traditions and true records of an empire, dating back for a thousand years, such as China is supposed to have done.

It is to be observed also that the history of the Shang dynasty, whose example was cited by Yueh, does not confirm his statement. In the 4th section or " the " instructions of E;" see Medhurst's translation, page 142. Tang, the founder of the Shang dynasty, is specially commended by E-yun. "He extensively sought " after *intelligent men* that they might afford aid to his " successor," and Pan kwang, see Section 9, page 158, says " Formerly my royal predecessor studied only to " employ the members of ancient families in the govern- " ment;" and in Section 12, page 169 the emperor Kao

tsung, or Woo ting, appointed Yue, who possessed some resemblance to a person whom he had seen in a dream, and whom he supposed Shangti had conferred on him through this means. This was just the very practice that She hwang-ti had decreed after hearing his council; and there is no example of the governorships of provinces being confided to princes of the sovereign's family in the Shang dynasty.

At all events these customs and records do not appear to have been known as recorded maxims of state to the chief of the Tsin state, who is reputed to have been the leading and dominant feudal lord of the defunct Chow empire. If they had been so, Yueh would not have appealed to them, instead of merely mentioning his own personal hearsay of these things.

The minister of She hwang-ti who replied to Yueh, is made by Sze-ma-ts'ien to deny the truth of the last speakers remarks about the expediency of adhering to the ancient dynastic models as a rule of government; but he is also made to introduce and include in his arguments at the opening of his speech, the first five legendary emperors of China, who, according to native critics, are not even mentioned in the historical works which are sought to be considered as authentic; and which could not therefore consistently have been known at the time of Li-sze; and yet about which, he is assumed to be contending.

Mayers C.R.M. in page 123, says, that Li-sze "originally an humble scholar of the state of Tsin, was him-

"self a well taught scholar;" and hence it is all the more improbable, that he should have made such a speech ; and it raises a suspicion as to the genuineness of Li-sze's harangue before the new Emperor. He, however, is made to say that the three dynasties, (Yueh had only mentioned two) had not followed the custom alluded to, (which from the passages quoted above from the Shoo-king, was not correct;) and moreover that Yueh had appealed to the administration of three dynasties, which hardly need have been said under the circumstances that Yueh had only mentioned two lines of sovereigns ; but he added emphatically, that Yueh had spoken of the actions of those dynasties which could not serve as models or rules of conduct to the new emperor. How was this reconciliable with the often repeated positive statements in the Shoo-king about the universal empire of the Hias and the Shangs? The chief point made clear by Li-sze in favour of the new empire, and in contradiction to the previous state of China, was, that as "the empire is made and solidly constituted, the laws "and ordinances are only to proceed from one sole "authority;" and yet it was the cardinal excellence of Yu, and the other supposed ancient sovereigns of China, that they were the sole source of legislation and authority.

Could Li-sze have drawn such a contrast between his sovereign and the past, and offered such statements in the presence of so many learned men, if he had been familiar or even acquainted with the Shoo-king, and its

narratives of Yao and Shun, and Yu; or if he had known of them, could he have shown a more contemptuous disbelief in their being a true history of Chinese antiquity? and yet, as a minister of state, and a scholar, he must have known the ancient records of China. He is made to appeal also to antiquity, but only to pervert the received traditions of the empire by stating ;—

"In ancient times when the empire was out of joint, "and in disorder, no one was found capable of restoring "its unity."

The dislocation of the empire here referred to, had only existed for some hundred of years, since the Chow chief ruler had lost his hold over the other princes who were his feudatories ; and what Li-sze is reported to have said, could not have been truly applied to "ancient times," during which the Chinese maintain, that unity of government, of authority, and of civilisation, was the prominent feature of the reigns of the great sovereigns of the first two ancient dynasties, and was set forth in the Shoo-king as an example for posterity.

It was simply a misstatement, to say that no one had been found in those times to unite the nation : or else it is a misstatement, to say with the Shoo-king, that Yao, and Shun, and Yu, and their descendants, had done so.

Li-sze, furthermore, openly accures the assembled literati of *untruth*. "The most pathetic and the most "empty discourses were used, in order to bring trouble "in minds, and *to distort the truth*," and he adds their "motive in distorting the truth, was, "to shake and

"overturn that which the ancient sovereigns had "established and founded."

This was pretty strong for the statesman of the rising power who had overturned the very sovereigns themseves; but it puts clearly the case, and shows that the literary works which formed a subject of complaint, must have been books of free thinking and revolutionary tendencies, instead of being, as is supposed, models of good government, and obedience to the laws, such as the Shoo-king and other books of the same sort professedly are.

It could only have been against the books of the first mentioned description, the contents of which seemed to have been used by the literati to excite the people to murmur, and to despise the government, that Li-sze could have with propriety asked for an edict.

The grievance against the literati was founded on their using "antiquity for destroying the existing state of things." Now the antiquity described in the Shoo-king, was all in favor of obedience to the sovereign under the circumstances, for the "existing state of things," was just what the Shoo-king held up as the perfection of good government and happiness of the people; as She hwang-ti, by his power and authority, had put an end to the civil wars and merciless rapine that had harsassed the Chinese people under the feudal fighting states, and the whole nation was thus enjoying peace and prosperity. Chow Tsing had said in his speech, "all the populations now enjoy the happines of

"tranquility; they have ceased to be exposed to the "calamities of civil wars," and Yueh who replied to that speech, never once called this assertion in question.

Moreover, She hwang-ti is nowhere described as a cruel or hard master, in the complaints made against him previous to the burning of the books. Li-sze specially points out, "As regards the populations who tranquilly "enjoy rest amidst their families." No where is it recorded that She hwang-ti had merited that his government should be overturned, in the same way as the last of the Hea and Shang monarchs had been cast out; owing to their oppression of the people, which turned heaven against them, and justified the rebellion that had overthrown them.

The works of Mencius are certainly incitative of rebellion, and extol the people over the sovereign. Dr. Legge shows this in his prolegomena to the classics, in which it appears that Mencius maintained the people's right of dethroning a sovereign; and yet curious to relate, this revolutionary book, which must have been generally known, is never mentioned in the edict.

Gaubil, in his Chronologie Chinoise, page 91 says, "Some Chinese authors have stated that the books of "Mencius were not burnt, but this is not at all probable. "Mencius' works were read by many, and that which "he wrote about the government of the ancient princes, "is precisely what She hwang-ti would have wished to "see buried in eternal oblivion."

The Shoo-king, and the other classics, were all on the side of She hwang-ti, and would have confirmed his government approvingly if appealed to. If they existed then, and were received as veridical, it is all the more astonishing that they were not cited in his favor. And yet Sze-ma-ts'ien gives as the supposed cause of their destruction, that they disapproved of the new emperor's conduct. It would rather follow from the circumstances that the object of consolidating She hwang-ti's power would have been better attained by preserving these books. The inference from this is:—that She hwang-ti did not consider them to be truthful histories of the empire of China, unless the story of their destruction be disbelieved.

The demand made by Li-sze for the destruction of the books, first describes them as "the historical and other "documents which are preserved in the archives of the "official historiographers, with the exception of the "memoirs of the state of Tsin."

These certainly referred to the records of the feudatory states, whose independence had been destroyed by the success of She hwang-ti; for the are all here placed on the same footing as those of the Tsin state; and it was natural to desire to blot out the records of their governments, and thus to make them be forgotten, in order to confirm the sovereignty of the Tsins over them all.

If the supposed imperial Chow dynastic records had been delivered over to Tsin, as it is said the tripods

were; they would have been in safe keeping, and out of reach of mischief-mongers, and no motive could be assigned for their destruction. It is clear therefore, that the edict had not included them; for it is afterwards stated, "whosoever in the empire shall dare to keep in "their possession, and in hidden places, copies of the "Shoo-king, and of the Shi-king, or the writings, (what-"ever they may be) of the hundred different schools, "(that is to say of all the schools of diverse doctrines "that were then in existence) with the exception of the "functionaries attached to the tribunal of literati of the "first order, established in the capital, (the Poh-see "kwan, mentioned in the Chow li)."

It is first also to be noted, that the classical and sacred works of the sages of China, are here mixed up together with the heterodox works of a hundred different doctrines; which is hardly consistent with the veneration supposed to have existed towards the former.

Then, the people were forbidden "to make together "any observations on the Shoo-king or the Shi-king," and yet they are left at liberty to discuss the hundred different doctrines, the books of which were deemed dangerous and deserving of being burnt. All this is too inconsistent to be credible as a true account of such an important event. It is furthermore noticeable, as confirming the inference that the imperial archives were not destroyed; that the highest literary officials of the empire, attached to the ministry of learning, were permitted to retain copies of all the proscribed books,

and as Pauthier remarks, op: cit: page 13. "It ought "to be supposed that the greater part of these knew "how to take advantage of this permission:" and yet, when the Han dynasty is said to have wished, only 25 years after the event, to discover and reestablish the Shoo-king, not one copy was to be found among the descendants of these literati, nor even among the Tsin imperial archives, and the Shoo-king could only be recovered by the oral recitation of Fuh-shêng.

It is further to be remarked that even when the year after the edict, and when it is said that 460 literati "were buried alive, because by their perfidious dis- "courses, and by other means, they were causing "trouble and disaffection amongst the black heads," it is not specified whether these revolutionary excitements were derived from the classics, or from the heterodox books of the 100 different schools; and seeing that the contents of the classics would not have sown trouble and disaffection amongst the people, it is most probable that these men were punished only for commenting on the dangerous books which had been condemned; and it is thus evident that the demagogues who were executed by orders of She hwang-ti, had not drawn their ideas from the Shoo-king, as that book would have afforded principles confirmatory of obedience to the sovereign's rule.

The son of She hwang-ti, is made to say by Sze-ma-ts'ien, "that the literati confined themselves to reading "the writings of Confucius, whom they took for their

"guide, and of which they only now ask the applica-
"tion," but this would go to show that either the edict was only levelled against these books, or that the appeal of She hwang-ti's son was mere nonsense; for in the assumed speech of Li-sze it is expressly mentioned, that other writings besides the copies of the Shoo-king and the Shi-king were prescribed; so that the offence of the literati was not merely that which was attributed to them in the speech of She hwang-ti's son.

There is too much contradiction in the narrative of all this event to make it trustworthy, either as regards the received opinion as to the motives for She hwang-ti's action, or as regards the special names of the books that he ordered to be destroyed; but taking the narrative as it stands, the motive for this strange act may more probably be found in the valuelessness or untruth of the books as historical accounts of China, than in their being a cause of offence to She hwang-ti's government.

Besides this difficulty, which an analysis of the record of the transaction furnishes, against the existence of a sufficient material for forming a reliable chronology of China; it is even a question whether the destruction of the books reached any important number of chronological, or historical, or even literary works.

Ma-twan-lin, who is quoted by Pauthier, op : cit : page 18, says:—"The destruction of the books commanded by "Tsin She hwang-ti, had not any thing near the "disastrous results that might be supposed."

The quantity of books which Chinese endeavour to show had escaped from destruction, are too few to justify the remark of Ma-twan-lin: for if the handful which they were, constituted a majority of the Chinese literature that existed during the Tsin dynasty; the records of the past history of China on which the subsequent chronology was founded, must have been meagre and insignificant in the extreme. Ma-twan-lin, even says, (*in loco*) while noticing the incompleteness of the classics, "All these losses were in nowise caused by the "fires of Tsin":—thus betokening his own misgiving about the fact of She hwang-ti's edict having been the chief cause of the paucity of historical works; and he adds, "From the time of the Hans to the present, so "few of the books and the bamboo tablets on which "they were written, have been preserved, that out of a "hundred there are hardly one or two that remain. "It was not the Tsins who annihilated them. It was "the students who themselves destroyed them."

If then, during the 800 years that had elapsed from the Han epoch to the time of Ma-twan-lin, the disappearance of books had been in the above ratio; and if the learned Chinese before the Han, had the same destructive spirit, and no greater love for books than those students mentioned by Ma-twan-lin, it may be fairly estimated, that the ancient books stated to have been written, and supposed to have come down from the Hia, and Shang, and even the Chow dynasty with its civil wars, (a period of at least 1500 years according to

Chinese,) must have diminished in a still more adverse ratio, the possibility of any quantity remaining at the end of the Chow dynasty, when She hwang-ti commenced to rule China. Indeed, as the very earliest books supposed to have been written, are not calculated even by the sternest upholders of the literary antiquity of the Chinese, to have been more than a few; it would be almost miraculous to expect, that with such indigenous elements of destruction surrounding them, as those which existed for the period that Ma-twan-lin describes, there could have been but extremely few in number remaining after 1500 years exposure to similar influences.

The explanation of Ma-twan-lin is almost a proof that he considered the history of the book catastrophe insufficient to account for the paucity of historical records; especially as the Chinese theory of imperial historiographers would not only supply but preserve continual records of Chinese history.

To show however more clearly the exaggeration in vogue under the Han dynasty, there is a statement of Pankoo, (see Pauthier op: cit: page 32). "Matters "had arrival at this point that under the reign of the "emperor Wu-ti (140, 87, B.C.) portions of the books "were still missing, and the bamboo tablets which con- "tained them were so damaged, that the rites and the "music prescribed for the religious ceremonies, could "not be accomplished."

"The Emperor was moved at this, and said with a "sigh, I am very afflicted at this state of affairs."

This really occurred B.C. 124, according to the Tong-kien Kangmou; and yet Pauthier, op: cit: page 25, quotes Khiou-chi, who is cited in the Li-tai-ki-sse and says that Liu-ngan prince of Hwai-nan, at 130 B.C., had recovered the Chow Quan, the Shoo-king, the Li-ki, the Shi-king, the Ch'un Ts'iu with the commentary of Tso-chi, and the Li-yoh, or the book of music; and it is specially stated that this prince went, in the 10th moon of the year 130 B.C., to the court of the Han emperor Wu-ti, in the 5th year of his reign, to whom he was personally related, being a grandson of the founder of the Han dynasty; (see Mayers, C. R. M. page 132, Liu-ngan) or *six years before the time* of the alleged declaration of the Emperor, that the religious rites could not then be performed for the want of these books.

There is such contradiction in all this that it tells strongly against the truth of the whole of this chapter of Chinese history.

Pauthier, op: cit: page 32 et sequ: gives inventories of the books mentioned by Chinese authors, as having been in existence at the times of the sovereigns Ch'êng-ti 37, 7, B.C. and Ngai-ti 6, B.C. which were made by Liu-hiang (B.C. 80, 9) and his son Liu-hin. The first of these catalogues comprised different copies of the six Kings :—Yih-king, Shoo-king, Shi-king, Li-ki, Yoh-ki, Ch'un Tsiu, Lun-yu, Hiao-king, Siao-hioh. The second catalogue contained the philosophical writings. The third poetry. The fourth military arts. The fifth treatises on the science of numbers, the Thien-

wen or astronomy, the Lih-pou or calendars. The sixth contained books on medicine and medicaments.

Amongst all these books there is not one work treating on Chronology *ex professo,* or any books, excepting the Shoo-king, affording any data for the same.

This was therefore all the classical ancient written repertory that Sze-ma-tsien had at his command, when compiling his celebrated chronological and historical work. He seems to be in "the helpless position of a "historian writing at a time when there was no recog- "nised chronological era, and no certain chronological "data for distant periods." See Sir G. C. Lewis, op: cit: page 25, note 94, where he thus describes Herodotus; and the comparison of this author with Sze-ma-tsien, is perhaps the best ground for the similarity that some writers have perceived between them. There were besides, the other extant less ancient works, already mentioned, that were also available for his task, and the works of Lu-pu-wei B.C. 237, (see Mayers, C.R.M., page 146,) called the Chi-pen, which Sze-ma-tsien is known to have used.

He also had the oral traditions which had descended from antiquity, and which were current amongst the Chinese people at his time. Leon Carre, op: cit: page 312, says, Sze-ma-ts'ien could also gather some details "from the ancient traditions which were afterwards "disfigured by the Taoists, without however falling into "their errors. His placing Hwang-ti at the head of "Chinese history, can only be accounted for by this

"circumstance, as the name of Hwang-ti is not mentioned "in any of the books at his disposal."

It should however be remembered that some of these traditions about the reputed ancient times of Chinese, which were floating about at the same time, and which Sze-ma-ts'ien did not use, have been preserved in the so-called Taoist works, especialy in those of Chwang-tze, and Lieh-tsze, and the works of Kia I, of whom Mayers, C.R.M. page 78, says that "he was a "privy counsellor to Han wen-ti, B.C. 178, and that "he was active in establishing the literary canon." and also in the San-hai-kings, which Premare, "Discours preliminaire Au Chou-king" states, was probably written by Peh-e, the arranger of the ancestral temple under the emperor Shun, or even of the emperor Yu.

This work is undoubtedly an ancient book, and there is even some probability of its being a Chinese transcript of the work of Berosus the Babylonian, who was a priest of the temple of Belus; or it may be a Chinese version of the traditions from which Berosus compiled his work. The question of the authorship of the book will be considered in part II. of these researches.

It has been the fashion to draw a distinction between these ancient traditions in China, and to classify one portion of them as peculiar to the Taoists; and because the modern Taoists linked on to the portion of the old traditions, of which they seem to have been the special depositories, certain absurd doctrines and practices that

have rendered their name and teachings ridiculous, the stigma attached to these latter has become fastened to the old traditions themselves, which have but little or nothing to do with the Taoist practices and doctrines.

In consequence of this, these special traditions have been treated as false ; and at the same time the Ju-kiao traditions which Sze-ma-ts'ien had also access to, and which he followed, and which the official literati only acknowledge ; are held by them as the sole true traditions of China ; so as to carry out the theory that there are two sets of traditions in China, one set true, and the other false.

It may be remarked however, that the orthodox traditions, as they are called, are as much open to the reproached fabulousness, and of paradox, as those of the Taoists.

The legend of the birth of Confucius is an instance of this. "His mother Yeu-che, just before her "parturition, saw the fabulous animal called the Ki-lin, "in the court yard of her house, with a piece of jade "in its mouth. Yeu-che gently took the jade away from "its mouth, and found written on it these words, 'A "child as pure as crystal shall be born when the Chows "are on their decline. He will be a king, but without "any dominions.' She gave the jade stone to her husband, "and said, the child I bear in my womb is a son, and "the words written on the stone, that heaven has sent "me, by the the Ki-lin, apply to him,—At the time of "his birth, two dragons were seen on the roof of Yeu-

"che's room, and five old men entered the house to "gether. A band of heavenly musicians made the air "resound by singing these words "All heaven rejoices "at the birth of this holy child." On the body of the "infant were 49 marks of his future greatness, and on "his breast were visible the words, "He will point out, "he will act, he will decide, he will accomplish the "times." Pere Amiot adds that the five old men were "the five Ti. *i.e.* Fu-hi, Chin-nong, Hwangti, Yao, and Shun; and he says that these prodigies, according to the common assent of Chinese authors, assuredly preceded and followed the birth of Confucius. See the life of Confucius, in the 12th volume of the "memoires pour servira l'histoire &c., de la Chine."

See also Leon Carre, op : cit : page 450, who after "quoting the above passage, adds, "This legend is "held as veridical by both the learned, and the people "of China."

It is not to the purpose here to examine the historical truth of either of the above mentioned sets of traditions. It is the fact alone which is of present interest, *i.e.* that those traditions coexisted with those which Sze-ma-ts'ien used, and that other Chinese authors did use them, and came to other conclusions about Chinese history than what has been adopted by Sze-ma-ts'ien and other official Chinese historians. De Mailla gives an instance of this, op : cit : tome I, page VII ; "According "to the constant tradition of the Chinese, their history "from Fu-hi, the founder of their empire, to the

"time of the emperor Shun inclusive, was comprised in "the books called the San-fen and Wu-tien" and yet "Sze-ma-ts'ien rejected this constant tradition," though according to the Pere Amiot, in "l'antiquite' des "Chinoise prouvèe par les monuments," "The learned Chinese have never regarded as fabulous the reigns of Fu-hi, of Hwang-ti, and his succesors until Yao. (See Leon Carre op: cit: page 321, who further quotes from the same work,) "none of the learned, I say "none, that is to say not one of them, has ever doubted "that Fu-hi is not the founder and that Hwang-ti "is not the legislator of the Chinese monarchy."

There is no inherent reason for assigning any superiority to the Ju-kiao ancient traditions over those of the Taoists, as there are paradoxes in them both; and it is but fair to claim consideration for the fact that they existed all together, amongst the Chinese, as the deposit of ancient ideas, about the earliest times of the nation and its chronology.

Premare, in his "Vestiges &c, page 50, writes about the Taoist authors already mentioned above: "There is one "thing, that they are very ancient, and that they do "not hold the opinion of Confucius. Some of them "preceded Confucius, others lived shortly after him, and "they have nearly all followed a different method "from his. Who should dare to pretend that the "ancient traditions have fallen to the lot of Confucius, "and that no vestige of them has been preserved by "other schools?"

Gaubil, in his "traite de la chronologie Chinoise" page 62, writes: "One cannot say exactly, in what the "sect of Taoists consisted, and now consists. One can "even speak with less certainty of the origin of this "sect. In the time of Tsin She hwang-ti it had great "extent. Mencius complains of false sects in his own "time."

The different esteem set upon them, by contending literary sects in China, is not conclusive as to their real worth; and perhaps a closer examination of them may disclose an unexpected value, by showing that they contain some of the Babylonian traditions, which having been thus preserved in China, derive confirmation from their existence in its literature.

De Mailla op: cit: page XIX, when treating of Liu-hiang, (B.C. 80,9) and who was a close contemprary of Sze-ma-ts'ien, states, "Liu-hiang in the preface which "he placed at the head of his history of illustrious "women, declaims with a great deal of vivacity against "certain petty authors imbued with the ridiculous "doctrines of the Taoists, and who falsified the com-"mencement of history by mixing with it their ex-"travagant reveries."

This passage is merely given to prove the fact that at about the time in which Sze-ma-ts'ien wrote, there were also several Taoist authors, who embodied in their works, the traditions current at that time in China, relating to the chronogical commencement of its history.

"Gaubil, in his "traite de la chronolgie Chinoise," page 65, remarks, that "Li-sze and the Emperor She "Hwang-ti were infatuated with the principles of the "Taoist sect, and it is therefore probable that a strict "search was not made for the books of that sect." If this be correct, it would show that these books were in circulation before She hwang-ti's time, and consequently formed a part of the ancient literature of China.

In the catalogues of Chinese books, that were recovered during the Han dynasty, which were compiled by Liu-hiang, there were, according to Dr. Legge, op: "cit: Vol. 1, page 10, more than 13000 volumes of a "larger or smaller size, the productions of nearly 600 "writers, and arranged in 38 subdivisions of subjects. "In the third catalogue, the first division contained the "orthodox writers, to the number of 53, with 836 "works, or portions of their works. The second sub-"division contained the works of the Taouist school, "and amounting to 993 collections from 37 different "authors."

It thus appears, that the Taoist authors at that time, were not so unimportant as De Mailla insinuates; and when they are compared with the number of what are called the orthodox authors, they hold an important position, being four-fifths of the latter, while the number of Taoist works even exceeds those of the Jü-kiao.

De Mailla gives a brief description of three principal works of these Taoist writers, "one of these works had

" the title of Ch'un Tsiu-hoei :" another production of " this same sect had for its author Hoang-ya :" " A third of these Taoists was the author of a book " entitled the Ch'un Tsiu-men-pao."

According to De Mailla, they all agreed on one point. " They admitted as the foundation of their system, ten " Ki, or ten periods or revolutions of time, the reality of " which they endeavoured to establish in several books, " which they took the pains to circulate, in order to " insinuate their errors."

These ten Ki, or ages, are probably only another version of the ten antediluvian sovereigns of Babylonia, mentioned by Berosus. This question will be more specially treated in a subsequent chapter, on the cycle of ten. De Mailla, in the passage above quoted, terms them, "extravagant reveries," but at all events there was a similar "revery" in Babylonia, and the coincidence of these two traditions must be explained away, before any such imputation can be justified as that made by the Chinese author Licou-Ju, quoted by De Mailla op : cit : page XXIV, who asserts, that " all the " Taoist historical traditions were the fruit of their own " fertile brains."

The duration of the world from its commencement to the appearance of the Ki-lin (a traditional era in Chinese history) was, according to the first Taoist author mentioned by De Mailla, 3,279,000 years : according to the second, there were 2,760,000 years for the same period : and the third gave a same period as

the first, of 3,276,080 years: only instead of placing them long before the time of Hwang-ti, as the two first mentioned authors did, the third named author does not assign any such precedence to the ten ages. This difference is remarkable, as in the surmise that Hwang-ti be the first man, or Adam, the third author would have placed the ages in the same order of time as the Babylonians placed theirs, and also in accordance with what the book of Genesis relates of the ten antediluvian patriarchs.

With regard to this assignment of long ages at the commencement of Chinese history, Mayers, C.R.M. page 364, has the following remarks;—

"Speculations of this nature embodied in works "such as the *Yuen-ming-pau*," (the third author mentioned by De Mailla,) "now no longer in existence, "were reproduced in the chronology of the Han dynasty, "where it is asserted that from creation to the capture "of the Lin (the Ki-lin caught by Confucius' mother ?) "in the days of Confucius (B.C. 481), a period elapsed "of 267,000 and odd years, divided into ten Ki or "epochs."

Mayers, C.R.M. introduction page XI, also remarks;" "In obedience, it would seem, to an impulse, the "influence of which is distinctly marked in the literary "traditions of the Chaldeans, the Hebrews, and the "Hindoos; a doctrine of the hidden properties, and "harmonies of number, imbues the earliest recorded "expression of Chinese belief."

Mr. Jules Oppert, in the meeting of the Society of Biblical Archæology, held in November 1879, made a remark that the chronology of the ten antediluvian patriarchs corresponded in certain circumstances with the chronology of the Babylonian ten sovereigns of the same period. These sovereigns are held to have reigned 432,000 years, and Mr. Oppert oberves that the Scripture duration of the ten patriarchs was 1656 years, both of which epochs being divisable by 72, appear to be thus connected.

In connexion with this subject, and before any further examination of it as far as Chinese are concerned, it may be useful to bear in mind the following quotation from the *Quarterly Review* for July, 1877, page 140, in an article entitled "The science of electricity as applied in peace and war," where attention is drawn to the numbers deduced by Halley from his researches. After noticing the four polar periods imagined by Hanstein, of 1640 and 860 years for the north pole, and 4609 and 1304 years, for the southern pole, the reviewer gives in a note, the following passage from Sir Wm. Snow Harris, "Magnetism" page 17.

"By a curious coincidence, these periods involve a "number 432, sacred with the Indians, Babylonians, "Greeks, and Egyptians as being dependent on great "combinations of natural events. Thus the periods "860, 1304, 1740, and 4609 become by a slight modifi- "cation, 864, 1296, 1728, 4320, which are not inad-

"missible, considering the complicated observations from "which the first numbers are derived. Now these "numbers are each eqal to 432 multiplied by 2, 3, 4, "10, successively. According to the Brahmin my- "thology, the world is divided into four periods, the "first being 432,000 years, the second to 2 by 432,000, "the third to 3 by 432,000, the fourth to 10 by 432,000. "It is also, according to Hanstein, not unworthy of "remark, that the sun's mean distance from the earth "is 432 half radii of the sun; the moons mean distance "is 432 half radii of the moon; but what is more "especially striking is the circumstance that the number "25920 (=432 by 60) is the smallest number divisible "at once by all the four periods, and hence the shortest "time in which the four poles can accomplish a cycle. "Now this time coincides exactly with the period in "which the precession of the equinoxes completes its "cycle. Certainly a curious and remarkable series of "coincidences."

It may be noticed here that the Chinese have also a similar traditional period of 432,000 years, which is made up of the 24 reigns of the Tien-hwang and the Ti-hwang of 18,000 years each.

13 Tien-hwang at	18,000	years	234,000
11 Ti-hwang „	18,000	„	198,000
			432,000

which will form the subject of further consideration in a subsequent chapter. It is merely mentioned now, to

show the analogy between the Chinese and Babylonian theories of chronology.

Bailly, "Histoire de l'astronomie Ancienne," page CXIV, remarks on this subject, "the nine brothers of the Gin-"hwang who are said to have reigned each over one "portion of the nine regions in which the earth was "divided, closely resemble the nine sons of the Indian "sovereign Acnydrouven, who reigned over a similar "division of the world." He adds, "this fact is very "remarkable, and seems decisive for the identity of the "two histories, and one can conclude that the fables of "the Taoists contain some facts of the ancient history "of India."

The assignment of a longer period by the Chinese for the reigns of the Tien-hwang, than that allotted to the Ti-hwang, may appear to have been made in accordance with the ideal superiority of the former, but curiously enough these two periods of years correspond to a division of the time assigned to half of the ten antediluvian kings of Babylonia already mentioned.

Alaparus	10,800 years,	= 3 sari.	Alorus	36,000. years,	=10 sari
Amegalarus	64,000 „	=18 „	Almelon	46,800. „	=13 „
Edoranchus	64,800 „	=18 „	Amenon	43,200. „	=12 „
Otiartes	28,800 „	= 8 „	Davonus	36,000. „	=10 „
Xisuthrus	64,800 „	=18 „	Amempsinas	36,000. „	=10 „
	234,000 years,	=65 sari		189,000 years,	=55 sari

See Sir Wm. Drummond, "Origin of the Babylonian „ empire," page 9.

and it may be observed that that number of Sari of 3600 years each, which are represented by these years, is 65 for the larger quantity, and 55 for the smaller; so that as the whole number of Sari during which these Babylonian kings are said to have reigned is 120, the division above made, is exactly in the same proportion as the division of the 24 Chinese reigns into terms of 13 and 11.

$$\frac{65}{55} \div \frac{13}{11} = \frac{5}{5}$$

so that the similarity is methodical. The period of 18,000 years, assigned by the Chinese as the duration of the reign of each of the Hwangs, resembles the Egyptian period of 18,000 years, during the space of which the ancients kings and heroes ruled over that country, as related by Diodorus of Sicily, Book I, cap 44. A similar period of 18,000 years, is like wise stated to have been formed B.C. 504 by the Greek Heraclitus, though it does not appear whether its purpose was astronomical or chronological. (See Lewis, op: cit: page 98).

Bailly, in the "discours preliminaire to" his "Traite "de l'astrononmie Indienne et Orientale," page cx. remarks, "This division into kings of earth, and kings of "mankind, is analogous to that of the Greeks, and especi- "ally to that of the Egyptians, into reigns of gods, semi- "gods, and men, and that of the Persians, who also place "before the appearance of the human species two other "species, of beings, the Dives and the Peris; and also to "that of the Indians, who also held that two species

" of being, the gods, the Pedar Devata, who existed before " mankind: and page B.C. XII, The Gin-hwang or the third age " It is remarkable that this age was filled " amongst the Persians with a species of creature who " were called Peris, and the name of Gin which the " Chinese apply to that third race, is precisely the same " as that which the Arabs give to the Peris, and accord- " ing to d'Herbelot, the Persian called them Gin-nian, " and the Turks Gin-lian, so that this name of Gin, " was in universal use in central Asia for designating " those who lived in the third age."

So that these Chinese periods had an existence in history, long before the Taoists were heard of.

It is desirable also call attention to the circumstance, that if the principle of the Babylonian antediluvian period be identified, as Mr. Oppert states, with the Scripture similar period of 1656 years, owing to their analogous division by 72, the Taoist period above mentioned of 3,276,000 years, is similarly connected with the chronology of the ten antediluvian patriarchs of the Bible, by it being also divisable by 72:—3276.000 ÷ 72 = 45500.

The use of a period of 72 was anciently known to the Chinese. Mayers, C.R.M. page 359 states, "The year is " divided into 72 periods of five days each, an arrange- " ment traced to the period of the Chow dynasty."

This division of the year is all the more to be noticed, as it establishes the fact that the ancient Chinese held that the year consisted of only 360 days.

The other period of 2,760,000 years being equally divisable by 12, it is similarly connected with the Genesis period of 1656 years, so that instead of these Taoist periods being "extravagant "reveries" and inventious of the Taoists, they are closely identified with some of the old traditionary periods of the Babylonians, and doubtless they were derived from that country. It is too much to suppose that the Chinese and Babylonians independently invented a system of ten primitive ages, each having periods composed with similar elements, and still more strange would it be to suppose, that the Babylonians derived their system from the Chinese; as that would place the Taoists, chronology on a pedestal of antiquity, that would hardly suit their critics. There i no fundamental hostile principle between the philosoply of Lao-tsze and Confucius, to make their respective followers so mutually inimical as they are, regarding these chronological theories; and the only motive perceptible for this, must be, that the Taoists represented he traditions of one portion of the ancestors of the Chinese, and the Confucianists resent this evident foreign origin of their nation, as inconsistent with their own arrogant theory of the indigenous commencement of their knowledge and civilisation.

Gaubil, in "Chinese Chronology" page 132, states:— "The Taoist sect has taken a great deal from the "ancient religion of the Persians, and it has made use "of several traditions and features of the history of the 'Jews such as Enoch, the garden of paradise, the tree of

" of life, &c., which it has applied to Chinese history,
" and to the country of China.

The inevitable Nemesis however attends on the official literati, through their unwittingly admitting traditions which evidently show a foreign origin, and a coloring for many points in their ancient history; and thus, while trying to uphold the credit of their own vain theories, they are betrayed into inconsistency with their protestations against the Taoists.

It should not be supposed, however, that the anti-Taoist theories have always had their own way: and moreover it is clear that those who have upheld them have even agreed with the Taoist opinions to a certain extent.

For it appears from De Mailla, op: cit: page XXI, that according to Taoists, during the Han dynasty "The " ten Ki, had been preceded the by Tien-hwang " Ti-hwang, and Jin-hwang, or the Three Hwangs, " (San Hwang), and the Taoists did not desist from " exciting disputes between the learned of that time, " relative to a tradition which pretended that the *San* " *Hwang* or the three sovereigns, and the *Wu Ti* or " the five rulers had been the first princes of " China." So that from the very beginning of all the Chinese literature, on which their chronology is founded, a dispute is recorded as having existed amongst the savants, as to whether traditions of persons not mentioned in the classics should be believed in or not.

De Mailla also mentions at page XXXIII, that "Kong-"nga-koue, and the majority of clever persons, "concluded that Fu-hi, Chin-nong and Hwang-ti, were "the San Hwang, or three sovereigns; and that Chao-"hao, Tchuen-hiu, Ti-ko, Yao, and Shun, were the "Wu-ti, or five rulers."

So that there is evidence that these "clever persons" admitted the historical existence of some of the personages, who were not mentioned in the so-called orthodox classics, but who were nevertheless known by the so-called outside traditions.

Although the abstract question of who the "three sovereigns" or the "five rulers" were reputed to be, is of no interest in the present portion of these researches; it is important to show the fact, that a discussion on this portion of the Taoist traditions, was rife in Sze-ma-ts'ien time; and that there were then two different theories of assigning the Chinese ancients to the two categories of sovereigns just mentioned.

De Mailla, testifies (same page) that, "others whose "sentiments seem to have been adopted by Sze-ma-"ts'ien, admitted that Hwang-ti, Tchuen-hio, Ti-ko, "Yao and Shun, were "the five rulers;" and that "Soni-giu-chi, Fu-hi, and Chin-nong were the three "sovereigns."

So that this fact is established; but there remains to be added, that the presumed tenderness for historical truth, which is supposed to have induced Sze-ma-ts'ien,

to carefully select only the reliable traditions of Chinese history, is not improved by the knowledge that all this affords.

Sir George Lewis, op: cit: page 374, has the following remarks on the Egyptian historian Manetho, who lived 306–247, B.C., about 150 years before Sze-ma-ts'ien, and on Berosus, 340–270 B.C., the Chaldean historian, whose work, according to Syncellus, was imitated by Manetho, and which are illustrative of Sze-ma-ts'ien's real character as an historian;—

"Such are the insoluble difficulties which arise "respecting chronology dissociated from history, handed "down by conflicting authorities, and reduced to an "arithmetical puzzle. There is something attractive "to a writer, in this discretionary power of dealing with "the history of bygone ages. His imagination is "captivated with the faculty of creating or annihilating "dynasties by a stroke of his magic pen; he becomes in "the language of the ancient astrologers, a chronocrator. "He likewise appears to possess a sort of reflex second "sight, by which he is able to look back into the un-"known past, and to discern images invisible to "ordinary eyes. He can evoke a great medieval period "of antiquity, which has hitherto been buried in "oblivion. If his pretensions to these gifts be admitted, "and if he succeeds in imposing on the credulity of his "readers by his familiar handling of subjects remote "from ordinary studies, he is regarded as a historical "seer, elevated far above these obscure chroniclers,

" who occupy themselves with digesting the occurrences " of well digested history."

It is moreover notorious, that the moderation of Sze-ma-ts'ien, was so distasteful to the Chinese, that it was disavowed very soon after his death, and Chinese chronology was carried by others still further back than Sze-ma-ts'ien had even done, in order to include more ancient traditional personages in Chinese history.

De Mailla, op: cit: page XXIV, describes how this happened ;—" These personages were not re-established " so soon. For some time, the Sse-ki of Sze-ma-ts'ien " was adhered to, who only commenced with the Emperor " Hwang-ti, and had left to others to go back to the " origin of the nation. Under the reign of Han-ming- " ti (A.D. 58), Pan-piao was charged to supply what " was deficient at the beginning of the Sse-ki, and Pan- " ku his son continued his work—He associated with " himself Tchin-tsang, Yu-may, Hong-ki, and other " members of his tribunal of history, and with them he " critically examined all that had been done till then, " and thus supplied what was wanting at the head of " Sze-ma-ts'ien's history."

The ancient traditions therefore which Sze-ma-ts'ien had rejected, were thus popularly, and officially, authenticated shortly after his death ; and this alone is proof of how profoundly they had taken root in the minds of the Chinese people, and that they must have been transmitted to them by other nations, at a previous

period, though they are continually called the dreams of Taoists.

The discussion of the question of the ancient personages, and the chronological period above mentioned, was not however considered as finally settled then; and it will be seen that in different succeeding times, the Ju-kiao or official literati, continued to assert their firm determination to reject them as unhistorical.

De Mailla mentions after the above quoted paragraph from his work, that "Lieou-ju" (possibly Lü-tsu-kieu mentioned by Mayers, C.R.M. page 146, and a contemporary of Chu-hi A.D. 1137, 1181, or Liu-shu, Mayers, page 134.) "who lived during the great Sung "dynasty, expressed his surprise that such a question "about these ancient personages could have ever "occupied the attention of able persons. Where, writes "he, can be found in the King, or in the books of "Confucius, the words San-hwang, (the 3 emperors) "or the Wu-ti (the 5 rulers)? If Confucius says in "the Kia-yu that Fu-hi, was the first who bore the "title of Ti, he only wished to show by that, not that "this prince was the first of the Wu-ti (the 5 rulers) "but that he was the first emperor of China."

"The sources whence were derived the San-hwang, "and Wu-ti, are Chwang-tsze and Lieh-tsze, who first "of all spoke of them as an ancient tradition."

It may possibly be true that the first written mention of these traditions occurred in the works of the authors mentioned; but that they previously existed in China is

evident, and also that they were derived from other sources than the Taoists just mentioned.

Liu-ju, above mentioned, was the author of the Wai-ki, or the history of the fabulous period, which figures as the introduction to Sze-ma-kwang's history, on which that of De Mailla's is founded, and in which many of the Taoist traditions are recorded, and they seem to have found supporters amongst Chinese writers ever since. De Mailla, op: cit: page XLIX, states, that Yuen-hwang, who compiled the Kang-kien or abridgement of the Kien-y-sse, A.D. 1590, upheld them. The opinions of this author will be best known by consulting De Mailla's account of the book.

It is notorious, that the Chinese incorporated at a later period, amongst their history, several Indian traditions, and also adopted Indian customs, and modes of thinking; so that it is not at all inconsistent with their practise, that they should have also taken in the traditions of the Babylonians, at an earlier date, without acknowledging whence they were derived. The above represents the entire stock of historical resources available at the time of Sze-ma-tsien, for the construction of the Chinese system of chronology; and it is therefore evident, that he did not represent an unanimous and authoritative view of Chinese ancient times; and that ever since his time, there has been a feeling, that the traditions which he excluded, were entitled to better treatment. Besides the archives and traditions which were used in compiling his history,

Sze-ma-ts'ien also used astronomical calculations, to establish some of his chronological epochs; and this will come under consideration in the sequel.

With all this however, Sze-me-ts'ien did not think that he ought to admit any chronological certitude before B.C. 841; and he consequently only considered the cycle of 60 years as reliable from that time. One may therefore thence conclude, that all the narrative of the times and events before that date, which he placed in his history, rested only on the already mentioned traditions; but which really had no special claim over the others, to be selected and preferred as solely deserving of credit.

It will be seen further on, that the epochs corresponding with our era, in which, according to his theory, Sze-ma-ts'ien placed Hwang-ti, whom he called the first sovereign of China, and also the Emperor Yao, are erroneous: but as this is not matter for present consideration, such inaccuracies in his history are not here noticed beyond this remark. Frérét, XIII, 303-304, says, Sze-ma-ts'ien based his chronology on the date of Confucius's birth, 557. B.C. "Then he counted 500 years "back to Chow-kung, brother of Wu-wang. He did "not found his system on astronomical coincidences and "periods. This method of *discovering and assigning* "*dates to events*, originated with Liu-hin, who had the "Chun Tsiu, and the Tso-chuan, with their 36 eclipses "of the sun, and some winter solstices." Freret XIII. 263, also says:—"Ma-twan-lin observes, that neither

"Sze-ma-tsien, nor the ancient commentators of the "Shoo-king, in the time of the Hans, do not seem to "have seen the entire copy of the Shang-shoo of Kung "Ngan-kwo; (i.e. the Shoo-king published by that "author):—and at page 284, "the work of Tso-chi, "known by the name of the Tso-chuan, had not been "published at the time of Sze-ma-tsien; and thus he "was ignorant of certain details of ancient history re- "corded in that book;" at page 289, "It is the Chipen "from which Sze-ma-tsien drew the list of emperors "since Hwang-ti, and according to Siu-fa, this book is "apocryphal."

Our attention is required now, to the progress of establishing the actually received chronology of China, from and after the time when Sze-ma-tsien finished his portion of the work; and it will appear that its principal foundation was on the astronomically calculated epochs already mentioned.

It is interesting to observe how this was done. It may be said begun with Sze-ma-ts'ien, who according to Freret, op: cit: page 35, "made the basis of his "Chronology, the Tai-tsou calendar (the authority "of which is disputed). He took for the root of it, a "winter solstice joined by a syzygy occurring six "hours preceding midnight, at the first day of "a supposed Kia-tze cycle of sixty; and he sup- "posed it posterior to another solstice of 24th De- "cember, B.C. 124, or 19 years, (by that cycle) earlier."

The Chinese look upon the reunion of the solstice and the syzygy at midnight on a day called Kia-tze, to be of good augury; and this was the reason why Sze-ma-ts'ien picked out one that answered to this requirement, viz., that of B.C. 105; but his calculations were inexact, as Freret shows, op: cit: page 37–38.; and it was therefore based on a fictitious foundation. It is a theory of Mencius, that the first cycle of 60 days began at the midnight of the occurrence of the winter solstice and at the same moment of the syzygy.

The commencement of any period at the winter solstice, was also an Indian usage, and one to which the Chinese have no exclusive claim, as the originators of this method. Yao, in the Shoo-king, gives the rules for calculating the solstice in his time, and as the solar year began on that day, the chief object was to determine that solstice; and hence arose the different theories for discovering its true date, and the different dates assigned to it.

The most ancient observation of the winter solstice which the Chinese state they have recorded, is that of Chow-kung the brother of Wu-wang, the founder of the Chow dynasty (B.C. 1104—1098); but the precise date of this observation is not marked in the Chow-li, where the details of this observation are described. The most ancient observation of the solstice with the year and cyclical day determined, is 25 December, B,C. 656, according to the Tso-chuan, at the 5th year of Hi-coung prince of Hou; but Frérét, vol. 14 page 34, shows that

this calculation is not exact, as it actually occurred that year, on the 28th December. There is also another similar observation mentioned at 25th December, B.C. 523, which is also incorrect. No other solstice observations are recorded until the Han dynasty, B.C. 206; but Freret, op: cit: page 35, shows how the Chinese themselves admitted that they could not then find the ancient methods of astronomical calculation, although they strangely assert that they could find all the other traditions of their country, a great part of which were embodied by Sse-ma-ts'ien in his Sse-ki.

This is confirmed by Souciet, op: cit: tome II, page, 2, "The European astronomy put in order by Kang-hi, and "published a few years ago, certifies that at the time of 'Tsin-shi-hwang-ti, the Chinese had lost the method "taught by the ancient Chinese, and especially that of "Emperor Yao, for the calculation of the planets and "fixed stars. What is there stated by the Emperor "Kang-hi, is taken for certain, by the authors who from "the time of the Han dynasty have worked on astro-"nomy. Thus at the time of Tsin-Shi-hwang-ti, there "were neither able astronomers, nor books of astronomy, "nor any known method. There only remained some "confused traditions, and the fragments of some "hidden books."

Freret, vol XIII, page 310, in a chapter on the variations which have existed amongst Chinese *savants*, on the subject of the chronology of their history, states;— "Some years after Sze-ma-tsien, Liu-hin, (66 B.C.) the

" author of the San-tong, by examining the Tchun-tsieu, " and the commenary of Tso-chi, B.C. 66, (according to " Gaubil, histoire de l'astronomie page 7.) undertook to " fix the chronology of certain historical epochs which " he supposed were also astronomical epochs; but these " determinations, which are based upon false astronomical " hypotheses, have a great defect; inasmuch as the " epochs of which there is question, do not possess the " astronomical characters that Liu-hin attributes to them.

Souciet, op: cit: II, 9. writing of Liu-hin, states;— " It is not necessary that I should here remark the " errors in calculation which Liu-hin, Lo-hia-hong, and " others, would have made, had they undertaken merely " to calculate the winter solstice, or any other of the " Tsie-ki, 2000 years before their own time;" and at page 13, " These astronomers have lost much time in " examining the numbers, which Confucius calls the " numbers of heaven and earth. The numbers of " heaven are 1,3,5,9. The square of 9 being 81, this " last number was taken for the parts in which the day " was divided. The number of 19 years, was also used, " and by their intermultiplication a period of 1539 " years, was formed. This period was called Tong, or " beginning, and three of these Tong made 4617 years, " or the period called Yuen."

Liu-hin seem to have been under the influence of the numerical hallucinations of his race, for he is said to have been the first author of the modern imaginary periods found in Chinese chronological works. The

chief period invented by him, and given as a method for calculating epochs, in his book, San Tong, was 144127 solar years, and it was said to represent the time from the Chang-yuen, to the moment of midnight that was the moment of the winter solstice, at the first day of the eleventh moon in the year 104 B.C. It is a remarkable fact that this extraordinary method was actually followed by the Chinese astronomers, till A.D. 1280, as the model of their epochs. It is pretty evident from this fact, what sort of a Chronologist Liu-hin was, and what must be the worth of his book.

It is curious to remark that Liu-hin and all these Chinese who undertook to revise, or to fashion their national chronology, based all their calculations on astronomical periods or circumstances, just as Sze-ma-ts'ien had used the winter solstice occurring at a favorable moment, for the same purpose.

Now a mere glance at these periods, shows how unscientific they are, when compared with the old (so-called) Taoist periods; and yet these first mentioned periods were the pure invention of the orthodox literati, though they better deserve the name of reveries than do the periods of the Taoists.

After Liu-hin came Pan-ku, A.D. 92, (see Mayers) the compiler of the chronicles of the western Han dynasty, in continuation of Sze-ma-ts'ien history Freret says of him, that "he gives a complete system "of chronology from Yao, to the Hans, B.C. 206. "He places the Tsin dynasty at B.C. 255, the beginning

" of the Chows at B.C. 1122, the Shang dynasty at B.C. " 2183, and Yao at B.C. 2303. but he went no further " back than Yao, and so differed from his predecessor Sze-ma-ts'ien. Matwanlin, the erudite Chinese archœologist, who lived from the close of the " Sung" dynasty to the Mongolian " Yuen" dynasty A.D. 1316; writing of Panku, in his great work called " the antiquarian researches," (tome 70 cap: 191, fol. 15 & 29, quoted by Frérét in loco) calls him a writer whose greatest " merit consists in his style, but without erudition or " criticism, so that entire confidence cannot be placed in " what he relates."

And yet, (Freret remarks) it is this same chronology of Panku, that is not worthy of entire confidence, which has been made the basis of all the systems proposed ever since; systems in which there have only been some slight changes made from Panku's chronological hypotheses.

The Pere Gaubil, in his " histoire de l'astronomie Chinoise," in tom: II page 22 of "observations mathematiques, astronomiques chronologiques" by Etienne Souciet, says of this same Panku, as follows;

" Pan-ku imperial historian, and in great reputation " under the emperors Tchang-ti and Hoti; adopted " the system of the Ki (1520 Years,) and the Pou, ' (76 Years,) Having arranged his epochs by the exam- ' ination of the historical memoirs which he possessed, ' he carefully marked the 103th year, of the Shang " dynasty, as the first year of the Ki. He found out,

" either a calculation, or an observation, of a winter " solstice, on the day Kia-chin, at the moment of " midnight, and at the moment of the conjunction of " the sun and moon, in the year 123 B.C; and by " going further back for 1420 years, be found according " to that method, that 1520 years before midnight at the " winter solstice in the year 123 B.C., the solstice was " also on the day Kia chin, midnight; and at the moment " of the conjunction the sun and moon; and be found " that this Ki was in the "108th year of the Shang " dynasty," and at page 37, Gaubil continues, one can " see evidently that at the time of Pan-ku:—the art of " calculating the exact moment of observing the solstice " was unknown. It is clear that the system of Pan-ku " is false."

This testimony of Pere Gaubil may be accepted as an impartial record of how Pan-ku and the Chinese Chronologists worked out their dates by such imaginary epochs as the Pou, and the Ki, of Li-fang, (the author of a book called the Sse-fen or four parts,) or at least the epochs which were said to have been invented by him; though the Pou of 76 years, is evidently the period of Callippus, and most probably made known to the Chinese, by western travellers.

It has been observed above, that Pan-ku placed the epoch of Yao, at 2303 B.C.; whereas Sze-ma-ts'ien had placed him 2145 B.C.; so that there was a difference of over 150 years, between them, on that one date.

The determination of the date of Yao, has always been considered a most important need in Chinese chronology; on account of his having given to the Chinese (according to the Shoo king) their first notions in astronomy, and also because Confucius never mentions any sovereign of China before Yao.

Pan-ku acknowledges that others had placed Yao at 2132 B.C.; and not at 2303 B.C.; or nearly 200 years, nearer to our era than he had done; but as Freret remarks, (in loco) Pan-ku gave no reason for his own view on the matter. Freret (vol 13 page 139) say that there are eleven opinions or theories on this dates of Yao; and that their divergence covers a space of 284 years, and that it was not authoritatively settled to the satisfaction of the official literati, and adopted by the Chinese tribunal of history and mathematics, until A.D. 1068; when Sze-ma-kwang, produced the system of chronology which is now recognised.

The epoch of Yao has recently been again brought into prominence by Dr. Legge, in his introduction to Vol. III of of the Oxford edition, 1879, of the "sacred books of the East," and an endeavour has there been made to establish its accuracy, by the aid of a stellar chart, prepared by Rev. C Pritchard, Savillian professor of astronomy in that university, from which an inference has been drawn in favor of the Chinese chronological system.

A careful perusal, however, of Dr. Legge's statements, does not discover any new support for the theoretical

date of Yao ; as will be seen by the following examination of what he writes on this subject.

Dr. Legge, op : cit : page 24, gives the names and supposed positions of certain stars, mentioned in the Canon of Yao in the Shoo-king ; and the force of his reasoning on these astronomical data chiefly consists in the novel illustration by a chart which gives the appearance of the heavens at the supposed date of Yao, and from which a coincidence in time is sought to be established as an era in Chinese chronology.

Now, the picture of the stellar heavens, adduced as a fresh witness in the case, does not add any special evidence to identify China as the sole place in which the positions of the stars described in the canon of Yao, could only have been observed ; for the same aspect of the stars might have been beheld according to the chart, "at any hour of the day above the horizon of any place in central China ;" (See page 27) so that all along the same degree of latitude through central Asia, this same position of the stars, with such an interval of a whole day for their passing the horizon, might have been visible at sunset, at different places at different astronomical times, according to their longitude ; so that the conditions of the accuracy of the chart, when used to identify the position of the Shoo-king stars with an observation of them in China, are thus wanting. The directions given for observing certain stars, in China, attributed to Yao, might as easily have been given by the sovereign of Balkh, in the twenty-fourth

century B.C.; for a mere glance at the map of Asia will show that Balkh is about 37°. north, and this same line of latitude runs through all the northern provinces of China from Shensi to Shantung.

Dr. Legge states (page 24) "It has *always* been "assumed by Chinese scholars, that when Yao said "the star of midspring is in Niao, he meant the star "culminating *at dusk*, in that season, at the point of "observation; and so of the other stars:"—and at page 25, he states; "When we wish to make the directions "of Yao available for the purpose of chronological "enquiry, the question that arises is this:—When did "the above named stars culminate at dusk in China at "the equinoctial and solstitial seasons"? This assertion, that it has *always* been assumed by Chinese scholars, that it was the culmination of those stars, *at dusk*, which was observed, cannot be authenticated for any period anterior to the Han dynasty 206 B.C.; as it is admitted that the Chinese at that time had forgotten all about their previous astronomy, and that they have not since recovered any astronomical documents of more ancient times, that would prove such knowledge to have *always* existed in China before the Hans.

Moreover, according to Gaubil, "Traité de l'astronomie Chinoise" page 8, "The interpreters, who "wrote at the time of the Hans, assure us specially, "that it was *at six o'clock in the evening*, that the several "stars mentioned in the canon of Yao, passed the "meridian above the horizon at the time of Yao."

The question, therefore is not as Dr. Legge puts it :— Did the stars culminate *at dusk ?*

Dr. Legge also maintains, page 26, that the culminating stars, at the equinoxes and solstices, at the remote period of Yao, could not have been computed back scientifically; and he concludes from this hypothesis, that the compiler of the canon of Yao, must have taken the facts of the culminating of the stars, from ancient documents, and possibly contemporaneous with the events they describe.

Now, taking for granted that the author of the Shooking had access to ancient astronomical documents, it still remains a question whether these documents were Chinese. It is most probable that the only astronomical documents available in the 24th century, B.C., were Babylonian; and as has been already observed, there were a great many traditions and fragments of Babylonian science floating about amongst Chinese, which belong to that period, and which have been unscrupulously recorded by Chinese authors as being of native Chinese origin.

As regards the impossibility of scientifically computing backwards the position of Yao's stars by Chinese, owing to their not having known about the precession of the equinoxes at the supposed date of Yao, it does not seem at all necessary that this should have been known, in order to create a fictitious epoch. There were abundant ready made data of similar observations of stars in connexion with the equinoxes and solstices,

existing in India; which could have been copied and inserted in the Shoo-king, in order to give it a specious air of verifiable antiquity. It should be remembered, that the Han astronomers who interpreted the Yao-tien, and who doubtless had some hand in interpolating it with their own comments, were the disciples of the Hindoo astronomers, with whom they were in close connexion; and they could have learnt from them the art of scientifically computing backwards any event, and to identify it with some astronomical phenomena. It was a regular practise amongst the Hindoo astronomers, to compose these retrospective dates, and to support them with true observations, which however became fictitious, by being connected with imaginary events; and hence it is not improbable, that the practise was introduced into China, from India. The Hindoo astronomers were well acquainted with the precession of the equinoxes, at that time; and the Chinese, even if they did not learn this from their Indian teachers, could easily acquire the conclusions that enabled them to produce retrospective stellar calculations for their purpose.

Bentley, in his "Hindoo Astronomy," page 75, says:—
"About this period (204 B.C.) besides these improve-
"ments, Hindoo history was divided into periods, for
"*chronological purposes*; which periods, in order that
"they might never be lost, or if lost or disputed,
"might, with the assistance of a few data, be again
"recovered, were settled and fixed by astronomical
"computations, in the following manner:—*The year by*

"*which each period was to commence and end having been* "*previously fixed on, the inventor then by computation* "*determines* the month and moon's age on the very "day in which Jupiter is found to be in conjunction "with the sun, in each of the years; which *being* "*recorded in the calendar, and other books,* might "at any time be referred to, for clearing up any "doubts, in case of necessity:" and at page 80, Bentley further says; "*This, no doubt was done, with a view of* "*making the world believe that such conjunctions were* "*noticed by the people who lived in the respective periods;* "*and therefore might be considered as the real genuine* "*and indisputable periods of history, founded on actual* "*observations.*" And he further states at page 86, "The point of time thus fixed upon, was found by "computation made backwards."

It will be observed, that it was at almost exactly the same time (204 B.C.) in which the Hindoos invented the process of scientifically computing back events, and of identifying them with astronomical coincidences, that the Han astronomers (206 B.C.) began their own experiments for improving Chinese astronomy and chronology; and with the examples of the Hindoos in their minds, they would have had no difficulties in applying similar means towards identifying any given period in Chinese history, that they wanted to establish as a chronological basis; which was specially the case with the period of Yao, that has always been considered since their time as the chief epoch to be determined. As the sixty

year cycle, by which the Chinese assigned the dates to their epochs, is *intimately connected with a conjunction of the planet Jupiter*, there is a striking similarity between the Chinese and Hindu methods of settling and fixing chronological periods.

If it be urged that the Chinese could not by themselves have made these backward calculations; they might notwithstanding have imitated the Hindoos in such cases though they made but a clumsy use of the knowledge of the Hindoo imaginary principles of chronology, as is evident from the period of Yao, which is so inexact as almost to betray its having been compiled by mere imitation, without scientfic data.

Dr. Chalmers so clearly shows the real unscientific character of the legend of the Yao-tien, that his words are here given to complete the investigation of this subject.

"In accordance with Chinese ideas of a sage, Yaou in a few pompous sentences makes it appear that he is perfectly acquainted beforehand with the results of the observations which he orders his astronomers to make;—"You will find the star is in *neaou*," &c. *But did they find the stars as Yaou said they would find them?* We are supposed to believe that they did, of course; but since we are not told, we claim the liberty to doubt. Suppose, for the sake of argument, that Yaou, before the observations were made, was dependent on tradition for his knowledge, and that his astronomers were capable of making accurate observations, they would in that case have had to report some

failure in the verification of his statements. But apart from this, we are prepared to affirm that three of the men sent to the four borders of China could not have seen the stars, which occupied for the time being the equinoctial and solstitial points, culminating on the evenings named; *e.g.*, the first point of Libra could not be seen culminating at nightfall, when the sun is in the first point of Cancer, for it must culminate at 6h. P.M., whereas the sun would not set in any part of China in midsummer much before 7h P.M., and the stars would not be visible for half an hour after sunset. This last fact would stand equally in the way, at the equinoxes, of the observers' seeing their stars culminating, unless, indeed, the time of observation was several centuries later than the date usually assigned to Yaou (B.C. 2356—2255), so that the stars to be observed had ceased to be exactly in the solstitial colure. The astronomer who went to the *north in winter* is the only one who would have no difficulty of this kind. He might see his star long before it culminated. But unless he had a good clock, he could not tell that it culminated at 6h. P.M. In the course of the long winter evening he would lose his reckoning sadly. The clepsydra also, supposing that he had one, might be ice-bound. The observation could have been made more conveniently in every way at the central station than at the northern border.

The value of the astronomical part of the Canon of Yaou, as a confirmation of the received chronology,

has been much overrated. According to the obvious interpretation of the text, Yaon had *reason* to expect the stars he mentioned to be in the equinoctial and solstitial colures. But what his reason was we are left to conjecture. It might be personal observation; or it might be tradition from his great-grandfather, or from Noah himself." See Chalmers Astronomy of the ancient Chinese, page 92.

Returning to Chinese authors; it should be remembered, however, that Sze-ma-kwang's system did not meet with entire approbation; for Liu-shu, who, according to Mayers, was associated with him in his historical labours, (or according to De Mailla, Liu-tao-yuen), "gathered up all that Sze-ma-kwang had judiciously "rejected, and worked out Chinese history to the times "of Pan-ku, or the first ruler of the world after "Chaos; and compiled the Tong Kien *Wai-Ki*, or the "history of the legendary period, which is prefixed to Sze-ma-kwang's annals. The *Wai-ki*, divided Chinese chronology into two parts:—certain, beginning 827 B.C.; uncertain, beginning 3679 years, earlier, or as far back as 4346 years, B.C.; to Pan-ku, and the origin of the world from Chaos. Another synchronous author called Lo-pi, in his Lon-sse, does not go further back than the beginning of the Hia dynasty.

Gustav Schlegel, in his "Uranographie Chinoise," page 752, says that "Lo-pi was one of the most learned and laborious antiquaries of China."

The next step in the process of forming the chronological system of China, occurred about 150 years after Pan-ku had finished his chronological arrangement of Chinese history; when in A.D. 265 a historical work was discovered, which is known as the Bamboo Annals; and which was used in making up anew the chronological system. At present the only remark which is of interest concerning this book is, that it places the beginning of Yao at 158 years later than Pan-ku had done; which certainly did not strengthen the previously received chronology on the crucial date in Chinese history.

Shortly after the discovery of the Bamboo Annals, "a celebrated scholar, and expositor of the ancient writings, classical and historical" (See Mayers, C.R.M. page 69) named Hwang-fu-mi; published a chronology of Chinese history, which is noticed by Ma-twan-lin and also by Siu-fa. (See Wylie.) This author (Hwang-fu-mi) makes the epoch of Yao, (see Freret in loco) about 180 years later than the Bamboo Annals do; so here was another divergence of opinion on this date. Besides this, he extended the chronology not only to Hwang-ti, as Sze-ma-ts'ien had done; but as far back as Fu-hi, whom he placed 760 years before Hwang-ti, and 1127 years before Yao; which was also another view than that of Sze-ma-ts'ien.

After this there are no more chronologists of importance until A.D. 724, under the Tang dynasty, when the bonze Y-hang, (according to Frérét) set about regulating the Chinese chronology by certain astronomical

hypotheses of his own. He calculated several historical epochs which had astronomical events connected with them. He fixed the death of Wu-wang, at 1103 B.C. and the 2nd year of Tai-kia, the grandson of the founder of the Shang dynasty, at 1719 B.C.; and the eclipse of Tchong-cang, mentioned in the Shoo-king, at a date supposed to correspond with 2128 B.C.; but he placed it on the 13th October, when it could not have been visible at Peking."

"He calculated wrongly what is related in the "Shoo-king; he examined the chronology of the empire, "and supposing on the one hand, that from the time "of Yao to the year A.D. 724, the interval was at "least 2988 solar years; and supposing on the other "hand, that the fixed stars advanced one degree in "83 years; he concluded that between the time of Yao "and his own time, the fixed stars had advanced "nearly 36 degrees. He had fixed the winter solstice "for the year A.D. 724, and he thence concluded that "at the time of Yao the winter solstice corresponded "to the first degree of the constellation Hiu." and in a note, same page, Gaubil writes, "Y-hang was evidently "mistaken about the movement in precession of the "fixed stars, and in determination of the winter solstice "for A.D. 724. He could not help therefore being "mistaken about the solstice at the time of Yao."

Gaubil, further states, that by examining the eclipses mentioned in the Chun-ts'iu and the Shi-king, Y-hang, concluded that the year B.C. 2128, corresponded to

the fifth year of Tchong-kang, and thence that the Hia dynasty reigned 432 years, and that of Shang 628 years.

It may be supposed therefore, that Y-hang was not more accurate in determining these chronological epochs than he was in that of Yao's time.

Y-hang committed a great mistake in predicting two eclipses which did not occur at the time he stated, and to justify himself, he published a work in which he stated that his calculations were right, but that Heaven had changed the ordinary rules for the movements of the celestial bodies.

In a note on this occurrence, at page 37, op: cit: Gaubil surmises that possibly Y-hang might have known and alluded to similar circumstances, such as the stoppage of the sun at the time of Joshue and Ezechias; and he further states, that *Hwai-nan-tsze*, who died B.C. 122, (or Liu-ngan, see Mayers, page 132), "seems " to have known about these two great events, and that " Pere d'Entrecolles had given many details of this " passage of Liu-ngan's book."

Mayers remarks on Liu-ngan, that "he was an ardent votary of the mystic researches of the Taoists," and also of " his belief in the supernatural."

His writings owed their preservation to the care of Liu-hang. B.C. 80–9.

This remark of Pere Gaubil is curious, as it would show that the Chinese, at the early period of Liu-ngan, and especially the Taoists, were acquainted with the Hebrew Scriptures, or their traditions.

Y-hang seems to have taken the eclipse of A.D. 724, as the starting point of his chronological calculations; and one of the conclusions he deduced from it is, that from midnight preceding that event to the conjunction of the planets at midnight, at the Chang Yuen, there were 969,601,740 solar years. This alone would suffice to show what is to be thought of the chronology of Y-hang. He died A.D. 727.

Rather more than 250 years elapsed after the death of Y-hang, before any further arrangement of Chinese chronology occurred. In A.D. 996, in the reign of the emperor Tai-tsong of the Sung dynasty, the work of regulating the national chronology was reassumed, and especially with reference to the first year of Yao. In order to determine that epoch, he ordered a catalogue to be made of all the different epochs of that first year; and in the memorial presented to the emperor on the subject it was declared to be B.C. 2326; although in the same memorial an inscription of the 3rd century of our era was quoted, from which it was sought to be made out that Yao began at B.C. 2411. The tribunal however decided for the year B.C. 2331 or 28 years earlier than Pan-koo's date, which was B.C. 2303. About 200 years after this, fresh chronological researches were again made to determine this date of Yao; and in A.D. 1204, the astronomers made out that it was B.C. 2337, although Sze-ma-kuang in 1086, had settled his system of chronology and placed the first year of Yao at 2334, that of Fu-hi, at 2816,

and Hwang-ti at 2582. Freret, (op: cit: page 323), remarks on this;—

"The variations of the chronologists contemporary "with Sze-ma-kwang, about the precise date of the "first year of Yao, although inconsiderable, are a proof "that this date was determined by means of reasoning, "or in a conjectural manner, and not on positive testi- "mony."

Freret XIII. 139, thus describes the decision;—"The "incertitudes on the chronology were at last put an end "to, by the publication of an authentic new body of "annals, A.D. 1068, during the reign of the Emperor "Tae-tsong."

The date of 2337, adopted by the astronomical chronologists of A.D. 1204, as above mentioned, was the one officially adopted by the tribunal of history, and is generally received at present; but Freret XIII. 303-304 justly observes, the chronology at present followed by the Academy of Han Lin, for the first ages of Chinese history, has neither been always unanimously received by the learned in the Chinese nation, nor is it even received now.

It is difficult to know what is, and what is not received, as authentic, by the literary Chinese. Freret XIII, 118 says "Parennin (a Jesuit writer) assured Mr. Mairan, "in a letter, that the existence of the nine sovereigns "anterior to Hwang-ti was then admitted in China as "incontestable," though it has been seen that these personages are only described in the traditions which

are rejected by the literati. The fact however remains that these nine reigns were incorporated in Chinese history as an addition to the work of Sze-ma-kuang.

Freret observes op : cit : 325, "all this shows that at "the very time when the chronology actually followed "by the tribunal was received, the most able and most "sensible among the Chinese, such as Sze-ma-kwang "undoubtedly was; regarded that chronology as a con- "jectural affair, and subject to great incertitude. Thus, "it is not surprising, that notwithstanding the approba- "tion given to that chronology by the tribunal, and the "majority of writers; a learned person should be found "to attack it in an excellent work on Chinese literature "published in 1561 under the title of Tien-yuen-li-li."

"The author of this book was Siu-fa, who maintains "in his book, that the chronology of the Bamboo Annals "is the only one to be followed, because it is the only "extant document of the age preceeding the destruction "of the books by She-hwang-ti. He observed, that "after the burning of the books, notwithstanding all "the care of Sze-ma-tseen, no historical monuments "were recovered which went back with certainty be- "yond 841 B.C. That Liu-hin and Pan-ku had no "other records than those which Sze-ma-tseen had, and "they were too bold in undertaking to fix the chrono- "logy of the times which Sze-ma-tseen had left undeter- "mined. He adds that the Bamboo Annals not having "been discovered at their time, they only had for the "basis of their work the Chi-pen, a work certainly an-

"terior to Sze-ma-tseen, but in which there are a "great many things of little certitude, and which Sze- "ma-tseen did not believe to have been of any value. "That the chronologists posterior to Pan-ku who took "his work as the basis of their systems have not added "to its authority, and that the changes which they "made in it in consequence of their own calculations "and different suppositions, oftentimes opposed to one "another, are a proof that they had no certain principle "in working out their chronology: and he moreover "carefully compared the inconsequences and absurdities "that he remarks in their systems. He places the first "year of Yao at 2145 and that of Hwang-ti at 2395 B.C.

To complete this sketch of the process and progress of the formation of the system of Chinese chronology, it remains to be mentioned that under the Ming dynasty efforts were again made, to correct the several epochs of which it was composed, and at A.D. 1573, the prince T'ching assisted by an astronomer called Hing y-lon (other wise Yun-lou) made a careful examination of Chinese chronology. See Gaubil, Hist: Astron: Chin: page 117.

Then came the influence of the Jesuits in China, and their astronomical and chronological calculations, which have in a great measure followed the dates supplied by the Chinese who had preceded them in the tribunal of mathematics.

The combined result of all these efforts, was the chronological edifice reared by the Tong-kien-Kang-

mou, and officialy approved of by the Emperor Kang-hi, as the standard records of the antiquity of the Chinese nation.

The preceding remarks will have shown how far it merits the confidence which the Chinese repose in its accuracy; and will, it is hoped, suffice to explain the sources and method of the formation of their chronology.

It cannot be called in question that "Chronology is dependent on astronomical determinations," as Sir G. C. Lewis most justly observes, in his work to which reference has been made in these pages; but this rule is only applicable to scientific determinations of astronomy as a measure of time; aud in no way supports the unscientific calculations of past epochs that Chinese have made, as being a correct method of working out a chronological history. The mere fact of Chinese chronology having been formed by such unscientific computation of past intervals of time, and not from synchronous monuments, shows its unreliability; for the Chinese can claim no exemption from the general axiom given by Sir G. C. Lewis, op: cit: page 358, "There is no "example of history founded on contemporary registra- "tion being reduced to mere chronology."

Chapter III.

The Origin and Application of Chinese Cycles.

ALTHOUGH the immediate purpose of this portion of Chinese researches, is not to investigate minutely the truth of Chinese history, it is necessary, before treating the special question of chronological cycles, which form such an important element in defending its accuracy, to cast a glance on the general historical situation in China, which these cycles have been used to support.

These cycles, require, moreover, to be first considered in their historical relations to the system itself; for although their intrinsic origin will naturally be discussed in this chapter of the researches, there are certain previous questions that demand attention as a basis of the enquiry.

The cycles, the chronology, and the history of the Chinese, are so intertwined, that to any one making researches into the truth of either, the others present themselves as mutually interested in the edifice towards the construction of which they have contributed so largely; and, hence, any isolated or abstract examination into the certainty of any portion of the chronological system would be incomplete.

The first question then, which suggests itself is :—what is the earliest period at which the reliable local history and chronology of China commences ? The second, is :—what amount of certainty can be attached to the earlier histories which pass as genuine amongst Chinese, beyond their being viewed as a local version of traditions about persons and events that were also current in other parts of eastern Asia in ancient times ?

An examination of the evidence bearing on the first mentioned question, leads to the conclusion, that this period of chronological certainty cannot be placed further back than eight hundred years before the Christian era ; and, as regards the second question, it appears evident that all narratives and chronology of events in China, before the above mentioned period, can have no claim to any authenticity, as history of China, similar to that which has been established by monumental records, in favor of other nations, such as the Babylonians, Assyrians, and Egyptians ; and that all the dates of such narratives and events, previous to that period, which have been assigned to them by Chinese historical writers, are consequently inadmissible, for lack of evidence to prove their mutual coincidence.

It will even be seen, in a subsequent part, that these Chinese narratives may be reasonably amended and explained, by the records of other nations; as these present historical evidence of the same, or at least, of

similar events and circumstances, having also occurred in other countries.

As regards the first mentioned conclusion, that the period of reliable Chinese history does not commence more than 800 years B.C., one has to recur chiefly for its support to the testimony of those who have carefully examined the question.

Pere Premare, already quoted in the previous chapter, gives the following evidence on the subject, in his preliminary discourse to the French translation of the Shoo-king, at page IV ;—

" Sze-ma-kwang begins his great history with the " sovereign Wei-Lieh-wang, B.C. 425: namely with " the civil wars, which lasted until the prince of Tsin, " after he became master of all China, got himself " called She-hwang-ti, or the first sovereign lord. Chu- " he also begins his Kang-mou, with Wei Lieh, as " Sze-ma-kwang does; and this, for a long time, has " been the epoch mostly adopted.

" There are others, who think that history can go " back further; namely to Ping Wang, or 770 years " B.C. near the time of Romulus. some say that it can " go back to the years of Kong-Ho; which would be " 841 B.C. Here then, according to the most able " Chinese critics, is the point to which one can go back " without great danger: all that precedes it is regarded " as very uncertain. The most indulgent Chinese do not " ascribe any certainty to earlier than 800 years before " our era."

Klaproth, in his "Memoires relatifs a l'Asie," Vol I, page 400, remarks' :—"For the purpose of reckoning "back to a more distant antiquity, the learned and the "ignorant, up to the present time have endeavoured to "take advantage of Chinese history as that of the most "ancient people, but without knowing really what "that history is."

And at page 406, after mentioning the historical work of Sze-ma-ts'ien, he adds :—"Although he took "advantage of all the materials which existed at his "own time; the history of China, nevertheless, re- "mained very incomplete, and incoherent, beyond "the sixth century before Christ. The documents "to which recourse was had, were very slightly in "accordance with each other, and it is only after "one hundred years later, that Chinese chronology "does not offer any more of such disparity. It is for "this, that I place the beginning of the *uncertain* "*history* at the first year of the first cycle, 2637 B.C.; "and *certain history* at 782 B.C."

At page 389, of the some work, Klaproth thus explains what he means by uncertain history. "In "which the facts are true, or at least, they are not "improbable; there is question of real personages, but "without chronology, or without chronology founded "on proof."

Dr. Legge, in his translation of the Chinese classics VOL. III. page 89, writes;—"From the review I have "thus taken of the documents purporting to belong to

" the different periods of Chinese history, which are " preserved in the Shoo, it will be seen that the year " B.C. 775 is the earliest date which can be said to " be determined with certainty."

There are some other authors, who do not admit that certain Chinese history begins so far back as 800 B.C. Abel Remusat, in his "Recherches sur la ville de " Karakorum" in the memoires de l'academie des inscriptions, says; "that which precedes the 2nd " century before our era is more obscure, though I think " that amidst such obscurity there are many facts to " be gathered."

Freret, Vol. XIII, page 123 writes:—"The Chinese " annals are composed of two parts, the certitude and " authenticity of which are very different. The part " which commences at the year 206 B.C. may be looked " on as having the greatest certitude. The part of " the annals which contains the history of the times " before the Hans, 206 B.C. or that of the first " dynasties, which tradition says, reigned in China " before that time, is of a very different sort. It is a " history compiled long after the facts it narrates, and " at a time when far from having contemporane- " ous monuments, there were hardly to be found a " few fragments of ancient histories composed from " them."

Against these statements denying the truthful certainty and antiquity of Chinese chronology, previous to a few centuries before Christ, there is to be taken

into consideration the persistent assertion of native Chinese historians, that their national annals undoubtedly commenced to be written in the reign of Hwang-ti, B.C. 2704, and that these annals have been composed by the imperial historians, in each reign, ever since, throughout the whole course of national existence from that date; and consequently, the question of historical inaccuracy, hereupon gives way to that of their chronology.

As has been already stated, in a previous chapter, there are no authentic yet discovered contemporary monuments, confirming this chronological accuracy of the Chinese; but they insist nevertheless, without offering any satisfactory proofs of the correctness of the statement, that from the time of Hwang-ti, a regular chronological succession of the chief events which have occurred in China, have been distinctly recorded by them, and marked in their annals, by means of, and in accordance with, an ancient 60 years cycle, at each year of the same, with the proper cyclical character belonging to it. Such insistance, however, merely rests on gratuitous assertions, made by Chinese, that this system of chronicling events by cycle, which they say was invented by Hwang-ti, has securely traced their history from B.C. 2704 to the present time.

European authors, such as Freret and Leon Carre, lay great stress on the advantage of this cyclical method of recording Chinese history, as affording a sure test of chronological truth; but these authors only base their

opinions on the same assertions of Chinese already mentioned.

These assertions, however, of Chinese and others, are to be met by the question :—1st, whether these successive events were synchronically recorded, from the supposed epoch of Hwang-ti by the above mentioned method of cyclical years, and what evidence is there that such really was the case? 2nd, whether these occurrences were not chronologically placed in regular order and succession, according to their cycle, in after, and recent times, by an artificially systematic retrospect of Chinese history. ?

De Guignes in his preface to the Shoo-king, page VII, writes on this subject :—"One must be very "credulous, to admit that all those facts, were written, "or even happened in such distant times," and at page XXXIV ; "The dates are only given by a species of "reasoning, or in a conjectural manner, and not on "positive evidence."

To answer these questions satisfactorily, it would have to be proved as a *sine qua non*, for the necessary basis of the truth and certainty of this system of Chinese cyclical chronology, that this 60 year cycle, on which so much stress is laid, was not only invented and was in existence at the time of Hwang-ti, but that it was known and used in China, at the remote period at which Chinese assert that Hwang-ti lived, and that it has been uninterruptedly used by them ever since. It is obvious, that unless this be proved the Chinese argu-

ment is mere *petitio principii.* Those recent writers who have made Chinese history their special study, have come to the conclusion that there is no proof offered in evidence of the asserted antiquity of the above mentioned 60 year cycle, and that Chinese chronology is consequently unsupported by this artificial system of reckoning years.

Mayers, C.R.M. page xv, writes on this subject as follows:—"The period at which this cycle was invented, " is a subject on which complete uncertainty prevails;" He then refers to Chalmers' dissertation prefixed to Vol. III, Legge's Classics, at page 90, and continues; "but " there is little doubt that *it first came into use,* as a " method of reckoning years, after the reform of the " calendar in B.C. 104."

He further states in same work, Part II. No. 295, where he again treats of the cycle of 60 years:—

" It was not until the period of the Han dynasty, that " this invention was made applicable to the numbering " of years;" (say B.C. 206,) and Chinese writers have " attributed the commencement of such a practise to " the period of Wang-mang, (B.C. 33 to A.D. 23) but " traces of its employment at a somewhat earlier date " have been discovered."

Dr. Chalmers in the dissertation on the astronomy of the ancient Chinese referred to by Mayers, as above mentioned, at page 96 of Vol. III, of Legge's Classics, writes:—

"The invention of the cycle of 60, is ascribed to "Hwang-ti, B.C. 2636, and in particular its application "to years is affirmed to have commenced in his reign; "but this is a mere fiction. It was not applied to years "even in the time of Confucius;" and at page 97, he writes:—"The state of confusion in which Chinese "chronology is found to be, down to the time of the "Eastern Chow, and the fact that not a single instance "of the application of the cycle to years, can be found "till after the classical period, are sufficient to satisfy us "that this invaluable method of dating years was *never* "*used in ancient times;*" and at page 98 he further states:—"So then the cycle of 60 years cannot have "commenced earlier than the Han, and owes its present "form to the scholars of Tsin."

Dr. Legge, in the prolegomena to the translation of the Chinese Classics Vol. III. part I. page 82, writes:—

"It was in the time of the Han dynasty, that it was "first attempted to construct a chronological scheme of "the history of the empire. For this purpose its "scholars employed the well-known cycle of 60 years. "It was assumed that this cycle had been made in the "reign of Hwang-ti, by Ta-nao, one of his officers, but "I need hardly say, that the assumption rests on no "satisfactory grounds. I must pronounce Hwang-ti to "be a fabulous personage, so far as any connexion with "the Chinese empire is concerned. If such a man ever "lived, it was elsewhere than in China, and it is not "till we come to the times of Ts'in and Han more than

" 2000 years after the period assigned to him, that we " find Ta-nao spoken of at all. And though the " invention of the cycle is then generally ascribed to him, " there are writers who give the credit of it to Fuh-he, " long before Hwang-ti.

" What is of more importance to observe is, that the " cycle, as it is now universally received and written, was " not employed before the end of the former Han " dynasty; *i.e.* not until after the commencement of our " Christian era, to chronicle years at all :—*its exclusive* " *use was to chronicle the days.* Koo-yen-woo, one of " the ablest scholars of the present dynasty, says " expressly on this point;—

" The 22 cycle characters *i.e.* the 10 stem characters " from *Këa* to *Kwei*, and the 12 branch characters from " *Tsze* to *Hae* were used by the ancients to *chronicle the* " *days*, and *not to chronicle the years.* For chronicling " the years there were the 10 stem names of *Oh-fung* " &c., down to *Tsan-mung*, and the 12 branch names of " *Shĕ Tʻe-kih* &c. down to *Juy-han.* The way of later " times, to say that such a year was *Këă-tsze*, and so " on, was not the ancient way."

" Yen-woo then quotes from the preface of the *Wae-ke*, " or "additional records," a supplement to the "General " survey of history," by Sze-ma-kwang, with whom " Lew-shoo, its author was associate, the following " testimony; ' The years of the sovereigns before (!) " ' and after Fuh-he down to King-le, are, I apprehend, " ' dark and hardly to be ascertained; and we borrow

" 'the names of the *Kea-tsze* cycle to chronicle them;'
" 'adding himself.'

"When did this practise of borrowing the cycle names " to chronicle the years commence? It commenced in " the time of the usurper Mang, (A.D. 9–22).

"The statement of this writer that the ancients " chronicled years by the names, *Oh-fung*, *She te-kih*, " is very questionable. So far as my reading has gone, " there cannot be produced a single unchallengeable " example of the naming of any year, by any cycle " whatever, previous to the termination of the Chow " dynasty. In the Shoo-king itself, the current cycle " is used to chronicle days, and days only."

And in a note to the above, at page 83, Dr. Legge, states:—"Sze-ma-kwang gets the credit of fixing the " standard chronology; but let me call the attention of " the student to Choo He's account of the matter. He " tells us;—When Kwang first made a chronological " scheme, his earliest date was the first year of Wei " lëĕ, (B.C. 424). Afterwards he extended his dates to " the time of *Kung* and *Ho*, (B.C. 840), after this " again, he made his "*Examination of antiquity*," " beginning with the period of *highest antiquity*," " but he could give no dates of years earlier than " that time of Kung and Ho. It was Shaou-k'ang- " tsëĕ who pushed the calculations up to the first " year of Yaou. The passage is quoted in Hang- " chin-fung's notes on the Annals of the Bamboo " books."

Dr. Gustave Schlegel, whose work "Uranographie Chinoise" presupposes as the basis of the system of Chinese antiquity therein displayed, that Chinese history, and especially the Shoo-king, is authentic in its chronology, finds fault with Dr. Legge and Dr. Chalmers for casting doubts, and supporting their doubts by evidence, as to the antiquity of Chinese history in Vol. II. page 804, of the above named book.

"Mr. Legge, the learned translator of the Shoo-king, "not having had, at first, any doubt about the historical "authenticity of the text, has been led by the specious "objections of his friend, the Rev. J. Chalmers, to "modify, and to cast a slur, on the authenticity of the "text, which he had translated."

Now in the preface referred to, Dr. Legge says merely, "Students who read the present volume carefully, will "find in the annotations little trace of the doubt about "the historical genuineness of the first parts of the "book, and some other points, to which decided expres-"sion is given in the prologomena. The fact is, that "when the earlier notes were written, the doubts in "question had not assumed consistency in the author's "mind; and he subsequently thought it the best course "to continue his interpretation and criticism of the text, "on the assumption that the whole was genuine."

It was no doubt the evidence on the subject given Dr. Chalmers, and that which Dr. Legge collected himself, and which he mentions in the extract above given from his prolegomena, that made him declare against

the antiquity of Chinese history. The evidence adduced withstands criticism. Dr. Schlegel does not meet *seriatim* any of the evidence brought forward by Dr. Chalmers and Dr. Legge. He adds to his own remarks on their doubts, an extract from the *Rapport annuel de la societè Asiatique* pp. 154, 156 by Mr. E. Renan.

"A remarkable thing in this publication is, that the "author endeavours there, for the first time, to raise "doubts on what concerns the antiquity of the Chinese "chronology and history. The doubts of Mr. Legge "start often from preconceived ideas, and from an "absolute confidence in the texts of Scripture, to which, "however, he refuses on the other hand to apply the "test of criticism."

This statement of Mr. Renan, implies that Dr. Legge's opinion against the authenticity of Chinese chronology, was the result of his leanings towards the chronology of Scripture, with which Chinese history might not be reconcileable. This is certainly not borne out by any statement of Dr. Legge with reference to this subject, and the only passage in the prolegomena that alludes to the chronology of Scripture is, "For myself I adopted "the chronology of the Septuagint as nearer the truth "than that of our present Hebrew Bibles, more than "five and twenty years ago, before it was definitely in "my plan of life to come to China as a missionary, but "the history of China need not seriously embarrass "any one who follows the shortest chronology of "Scripture."

Dr. Legge also VOL. III. pt I. page 112, in a note to the bamboo books, where it is stated that the 1st year of Yaou was *ping tsze* (13th year of cycle, B.C. 2145.), writes:—

"This is the first determination of a year by the "cycle name in the annals. I shall call attention to the "fact, that all those cycle names of the years in the "annals, *were introduced into them after their recovery* "or discovery A.D. 279." And at page 180, he says:— "The cycle denominations of the reigns are spurious;" "and offers as evidence on the subject, that the early "citation under the Tsin dynasty, and even later, of "passages from the annals, do not cootain these "cycle dates"—and he remarks:—"This fact, is "decisive on the point. Upon the 1st date, that of "*ping tsze*, marking the 1st year of Yaou's reign, "Hung E-heuen, a scholar of the present dynasty, "in the reigns of Kēā K'ing, and Taou Kwang, "observes:—The various books which quote the "Bamboo Annals, do so without the cycle dates. It "is not till we come to the chapter on chronology in the "books of Suy, that we find the first year of Yaou, "quoted as King-tsze."

The Pere Premare, in his before quoted *discours preliminaire*, states:—"It would therefore be abusing the "credulity of the learned men of Europe, to place "on such a high level the antiquity and solidity "of Chinese history. Regarding its solidity, it is in "vain founded on the historian Sze-ma-ts'ien, for this

" writer is held by the best Chinese critics to be untruth-
" ful. The cycle, or the revolution of ten characters
" united in turn with twelve others, necessarily produces
" sixty; this is the famous Kia-tse which is so highly
" exalted. I concede that it serves to denominate
" the years, and the days, that have been made to
" correspond to these sixty names, the order of which is
" immoveable; and that by means of this, some errors
" can be corrected; but I must add, that it is impossible
" to assign the time when the Chinese commenced to
" range their years by the sequence of this period,
" which of itself does not belong to the years more
" than it does to the months or the days."

" Even if it were true that Confucius made use of it
" in his Tchuen Tsiu, the antiquity of the usage would
" not go further back than 722 years, before Christ;
" in as much as no monument can be produced to prove
" that the Chinese had this custom in the most distant
" antiquity." " What foundation can there be for
" all these times which it has pleased Sze-ma-ts'ien to
" range according to the Kia-tse in ascending by this
" sort of ladder as far as Hwang-ti? He might in the
" same way have as well ascended as high as Pwan-kou,
" and his history would not have been any more solid
" for that."

The Pere Souciet in his " Observations Mathemati-
ques, &c., Paris 1732, Vol. II, page 137 writes:—

" It was easy, after the fact, and since this cycle was
" invented, to apply it to the years that preceded it,

" just as we have applied the era of Jesus Christ to all " the ages which preceded Dionysius exiguus, who " invented it."

" This invention cannot be earlier than the first " century of the Christian era, or even later than that, " and the origin of its use might still be said to be " immemorial. It would be required to know who was " the first author who used this cycle, and the time " when he lived."

It seems clear from the above testimony of learned men, who have made the origin and value of Chinese chronology their study, that the cycle of 60 years was not used in China earlier than a century before the Christian era. It might possibly have been known in China before that, as the use of such an epoch for counting years was known and used in central and eastern Asia in most ancient times; and it is even probable that the Chinese derived their knowledge of it from some of those nations, whom we know by historical evidence to have used it, long before there is any evidence of its having being known by the Chinese. In " The dawn " of history " by C. F. Keany, London 1878, page 186, there is a curious remark on this subject:—" The " Indians of Virginia kept a record of events in the " form of a series of wheels of sixty spokes, each wheel " representing the life of a man, sixty years being the " average life of a man among the Indians."

The Babylonians, certainly used the period of 60 years, or the " sossos" according to Berosus; and they

in all probability, had received it from their ancestors, or the preoccupiers of Babylonia, the Accadians.

A. H. Sayce, in his essay on Babylonian literature page 50, writes :—

" The Accadians made sixty their unit, and in their " higher calculations reckoned it as an unexpressed " multitude. Their fractions were on the duodecimal " system, with a denominator of 60 always understood."

Although there is yet no direct proof that the 60 year period had been transmitted to the Babylonians from the Accadians, there is such resemblance between the Accadian numerical system, and the Babylonian three chronological epochs, the Sarus, 3600 years, the Nerus, 600 years, and the Sossos, 60 years, that it is highly probable these epochs originated from the Accadian method of reckoning.

The chief thing to note is, that the 60 year cycle is not an imaginary or legendary epoch like the Hindu Kali youga, and other similar strange periods, but a real historical term of years, actually used in ancient times, by the Babylonians and others.

Sir George C. Lewis op : cit : page 117, writes :— " Four great years, of 4, 8, 19, 60 years, respectively, are mentioned by Stob. Ecl. Phys. I. 8. The period of 4 years is omitted, and the period of 60 years is stated at 59, in the corresponding passages of Plutarch, Plac, II. 32 :—Galen. C. 16.—Euseb, præpar Evangel : 64—So this period was not altogether unknown even in Greece, in ancient times.

Whether the Chinese derived a knowledge of the same directly from the Babylonians, cannot be asserted for lack of evidence of ancient intercommunication between these two nations.

It is probable that in ancient times the first settlers in China had received from their neighbours at Balkh, many of the methods used for computing time in use amongst the learned of that city, and thus indirectly the first Chinese did derive their knowledge of such methods from Babylonia, and Persia, whence they were derived by the astronomers and chronologists of Balkh. Sir H. Rawlinson, has pointed out in the *Quarterly Review* of October, 1866, No. 240,—in an article on "Central Asia," the literary influence of Balkh over all eastern Asia, and the Chinese who claim to have existed as a civilised nation syhchronically with Balkh, in its most flourishing days, by an *argumentum ad hominem* must have had communication with such a seat of learning, although they will not acknowledge it; and by their lack of really scientific acquaintance with the principles of astronomical chronology, they seem to have even forgotten much of that what they must have learned there.

Sir H. Rawlinson writes:—"Those who have been accustomed to regard Central Asia solely under its present condition of political and social degradation, may find it difficult to realise the idea that it was ever the seat of arts and industry, or had made any great advance in civilisation: yet such was undoubtedly the case. We are not able, it is true, as in the case of

Egypt, or Babylonia, or Assyria, to appeal to contemporary monuments in support of a Central Asiatic development, at a period of any remote antiquity; but the evidence to this effect, derived from a large field of induction, is not less significant and sure. The belief in a very early empire in Central Asia, coeval with the institution of the Assyrian monarchy, was common among the Greeks, long anterior to Alexander's expedition to the East, and could only have been derived from the traditions current at the court of the Achœmenian kings. . . . . The empire commenced with Sogdiana, Merv, and Bactria; in its subsequent development it included the modern provinces of Chorassan, Afghanistan, and finally at its period of greatest extension stretched from Seistan on the south to the Iaxartes on the north, and from the Indus on the east, till it touched the extreme limit of the Median frontier on the west."

"It is with the Eastern Iranians that we are principally concerned, as the founders of Central Asian civilisation. This people on the authority of the Vendidad, may be supposed to have achieved this first stage of development in Sughd. . . A most important evidence, however, of the very high state of power and civilisation to which they attained, is to be found in the information regarding them, preserved by the celebrated Abu Rihan, himself a native of the country, and the only early Arab writer, who investigated the antiquities of the east in a true spirit of historical criticism. This writer gives us the names of the twelve months, of the thirty

days of the months, and of the five Epagominœ, together with the names of the signs of the zodiac, of the seven planets, and lastly of the mansions of the moon. According to Abu Rihan, the solar calendar of Kharism was the most perfect scheme for measuring time with which he was acquainted; and it was maintained by the astronomers of that country, that the solar and lunar zodiacs had originated with them, and the very name moreover, by which an astronomer was designated in the language of Kharism being taken from the asterism of the eighth mansion of the moon. All this information is exceedingly curious, in its bearing upon the controversy, which has so long raged in the scientific world, as to the superior antiquity of the lunar zodiacs used respectively by the Indians and Chinese; leading as it does to a suspicion that neither the one nor the other of these systems may have been original; but that their similarity may be explained by their derivation from a common centre in Bactria, where astronomy was first cultivated by the Eastern Iranians."

Sir Wm. Drummond, op: cit: Vol I page 322, states that "Balkh was for many ages, the principal "residence of the magi. It was consequently the "early and the favorite seat of science, and even in "later times, when philosophy had fled from the banks "of the Ganges, when Babylonia had fallen, and when "Memphis was no more, Balkh afforded a last retreat "to the Oriental Muses."

18	Tárana.	Nyi-Sgrol-byéd.	Shing-spré.	Kuei-ouei.	20
19	Pártihiva.	Sa-skyong.	Shing-bya.	Kia-chin.	21
20	Vyaya.	Mi-zad.	Mé-K'hyi	Y-yeou.	22
21	Sarvajit.	Thams-chad-Hdul	Mé-Phag..	Ping-su.	23
22	Sarvadhári.	Kun-Hdsin.	Sa-byi.	Ting-hai.	24
23	Viródhi.	Hgal-va.	Sa-g Lang.	Von tse.	25
24	Vikrita.	r Nam-rgyal.	l Chags-Stag.	Ki-tcheou.	26
25	Khara.	Pong-bu.	l Chags-yos.	King-yu.	27
26	Nandana.	Dgah-va.	Ch'hu-Hbrug.	Sin-mao.	28
27	Vijya.	r Nam-Hgyur.	Ch'hu-Sbrul.	Gin-chin.	29
28	Iya.	r Gyal-va.	Shing-r Ta.	Kuei-se.	30
29	Manmutka.	Myos-byéd.	Shing-lug.	Kia-ou.	31
49	Rákshasa.	Srin-bu.	Shing-yos.	Y-ouei.	32
50	Anala.	Mé.	Mé-Hbrug.	Y-mao.	52
51	Pingala.	Dmar-Ser-chan.	Mé-Sbrul.	Ping-chin.	53
52	Kálayakta.	Dus-kyá-pho-nyi.	Sa-rta.	Ting-se.	54
53	Sidharti.	Don-grub.	Sa-lug.	Kow-ou.	55
54	Randra.	Drag-po.	l Chags-spré	Ki-ouei	56
55	Durmati.	b Lo-nan.	l Chags-bya.	Keng-chin.	57
56	Dundubhi.	Rna-ch'hén.	Ch'hu-khyi.	Sin-yeou.	58
57	Rudirdógári.	K'hrag-Skyug.	Ch'hu-P'hag.	Gin-su.	59
58	Raktáksha.	Mig-Dmar.	Shing-byi.	Kuei-hai	60
59	Krodhana.	Khro-vo.	Shing-g Lang.	Kia-tse.	1
60	Kshaya.	Zad-pa.	Mé-Stag.	Y-tcheou.	2
				Ping-in.	3

N[illegible] F[illegible] Y[illegible] *of J[illegible]*

[illegible] *Ch*[illegible]

	Sa[illegible]	[illegible] S[illegible]	[illegible] Na[illegible]	[illegible]nese Names	Ch No
1	Prabhav[illegible]	Rab-[illegible]	Mé-yos.	Ting-mao	4
2	Vibbava	r Nam-[illegible]yung.	Sa-Hbrug.	Von-chiu.	5
3	Sukla	Dkar-po	Sa-Sbrul.	Kise.	6
4	Pramodha	Ral-myos	Chags-r Ta.	Keng-[illegible]	7
5	Prajápati.	Skye-bdag	Chags-lag.	Siu-ouei	8
6	Angira.	Angira.	Ch'hu-pre.	Giu-chin.	9
7	Srimukha	Dpal-Qdong.	Ch'hu-bya.	Kuei-yeou.	10
8	Bháva.	Dnos-po.	Shing-K'hyi.	Kia-su.	11
9	Yuvá	Na-tshod-ldan.	Shing-Phag.	Yhai.	12
10	Dhátá.	Hdsin-byéd.	Mé-byi.	Ping-tse.	13
11	Iswara	Dvang-p'hyug.	Mé-g Lang	Ting-tcheou.	14
12	Bahudanya.	Hbru-mang-po.	Sa-Stag	Von-yn	15
13	Pramáthi	Myos-ldan.	Sa-yos.	Ki-mao.	16
14	Vikrama.	r Ñam.Quon.	l Chags-Hbrug.	King-chin.	17
15	Brisya.	K'hyu dich'hog.	l Chags-Sbrul.	Siu-se.	18
16	Chitrabhánu.	Sna-ts'hogs.	Ch'hu-r Ta.	Gin-ou.	19
17	Súbhanu.	Nyi-ma.	Ch'hu-lug.	Kuei-ouei.	20
18	Tárana	Nyi-Sgrol-byéd.	Shing-spré.	Kia-chin.	21
19	Pártihiva.	Sa-skyong.	Shing-bya.	Y-yeou.	22
20	Vyaya	Mi-zad	Mé-K'hyi	Ping-su.	23
21	Sarvajit.	Thams-chad-Hdul	Mé-Phag..	Ting-hai.	24
22	Sarvadhári	Kun-Hdsin.	Sa-byi.	Von tse.	25
23	Viródhi.	Hgal-va.	Sa-g Lang.	Ki-tcheou.	26
24	Vikrita.	r Nam-rgyal.	l Chags-Stag.	King-yn.	27
25	Khara	Pong-bu.	l Chags-yos.	Sin-mao.	28
26	Nandana.	Dgab-va.	Ch'hu-Hbrug.	Gin-chin.	29
27	Vijya.	r Nam-Hgyur	Ch'hu-Sbrul.	Kuei-se.	30
28	Iya.	r Gyal-va.	Shing-r Ta.	Kia-ou.	31
29	Maumatka.	Myos-byéd.	Shing-lug.	Y-ouei.	32
30	Durmukha.	Qdong-nan.	Mé-spré.	Ping-chiu.	33
31	Hémalamva.	Qjér-Hp'hyang.	Mé-bya	Ting-yeou.	34
32	V[illegible]mva.	r Nam-Hp'hyang	Sa-Khyi.	Von-su.	35
33	Vikári	Sgyur-byéd.	Sa-P'hag.	Ki-hai	36
34	Sarvari	Kun-ldan.	l Chags-byi.	Keng-tse.	37
35	Plava	Hp'har-va.	l Chags-g Lang.	Sing-tcheou.	38
36	Subhakrit	Dgé-byéd	Ch'hu-Stag	Gin-yn.	39
37	Sobhana.	Mdsés-byéd.	Ch'hu-yos.	Kuei-mao.	40
38	Krodhi	K'hro-mo	Shing-Hbrug	Kia-chin.	41
39	Viswávásu.	Snats'hogs-Dvyig	Shing-Sbrul.	Y-se.	42
40	Paribhava	Zil-Quon.	Mé-r Ta.	Ping-ou.	43
41	Plavanga.	Sprèhu.	Mé-Lug.	Ting-ouei.	44
42	Kilaka	P'hur-bu.	Sa-spre.	Von-chiu.	45
43	Saumya	Zhi-va.	Sa-bya.	Ki-yeou.	46
44	Sádharána.	T'hun-moug.	l Chags-Khyi.	Keng-su.	47
45	Virodhakrit.	Hgal-byéd.	l Chags-P'hag.	Sin hai.	48
46	Paridhávi.	Yongs-Hdsin.	Ch'hu-byi.	Gin-tse.	49
47	Pramádhi.	Bag-med.	Ch'hu-g Lang.	Kuei-tcheou.	50
48	Ananda.	Kun-Dgah.	Shing-Stag.	Kia- yn.	51
49	Rákshasa.	Srin-bu.	Shing-yos.	Y-mao.	52
50	Anala.	Mé.	Mé-Hbrug.	Ping-chin.	53
51	Pingala	Dmar-Ser-chan.	Mé-Sbrul.	Ting-se.	54
52	Kálayakta.	Dus-kyá-pho-nyi.	Sa-rta.	Kow-ou.	55
53	Sidharti.	Don-grub.	Sa-lug.	Ki-ouei	56
54	Randra	Drag-po.	l Chags-spró	Keng-chin.	57
55	Durmati	b Lo-nan.	l Chags-bya.	Sin-yeou.	58
56	Dundubhi	Rna-ch'hén.	Ch'hu-khyi.	Gin-su.	59
57	Rudirdógári.	K'hrag-Skyug	Ch'hu-P'hag.	Kuei-hai	60
58	Raktáksha.	Mig-Dmar.	Shing-hyi.	Kia-tse.	1
59	Krodhana.	Khro-vo.	Shing-g Lang.	Y-tcheou.	2
60	Kshaya	Zad-pa	Mé-Stag.	Ping-in.	3

Albiruni, Abu Rihan above mentioned, (Sachau's English translation, London 1879, page 100), traces the connexion of the Chaldeans of Babylonia, with the city of Balkh. He writes :—" The Chaldeans are not " identical with the Kayânians, but were their governors " of Babylonia. The original residence of the Kayân- " ians was Balkh, and when they came down to Mesopo- " tamia, people took to calling them by the same name " which they had formerly applied to their governors, *i.e.* " Chaldeans." It would appear from this remark of Albiruni, (Abu Rihan) that in early times Babylonia was a province of the eastern Iranian empire of Bactria which had Balkh for its capital; and that in view, of this, it is probable that the Babylonian or Chaldean knowledge of astronomy, and other sciences, was derived from Balkh, the seat of ancient learning ; and whence the Chinese probably also derived similar acquirements. The Babylonian and Bactrian culture seems identical, though it originated in north-eastern Asia.

As a probability can be thus traced, of the Chinese deriving their knowledge from Bactria, it should not be lost sight of, that a similar 60 year period has also been used in India, from ancient times; and it is quite probable that the Hindoos may have obtained a knowledge of it from the Babylonians ; for their own period of Kali youga or 432,000 years, is precisely the same as the Babylonian period of the ten ancient Chaldean kings, the reigns of whom were 432,000 years, according to Syncellus.

As this coincidence of two nations possessing such a tradition in their legendary history, is not likely to be fortuitous, and as the history of the Babylonians extends much further into antiquity than that of the Hindoos, it is probable that the Hindoos derived the tradition of this long period, or the Kali youga, from the Babylonians, and there is a consequent probability that they also obtained the 60 year period, which the Indians term the cycle of Jupiter, from the same source.

In connexion with this, it has already been observed in a previous chapter, that the Chinese have also a period of 432,000 years, connected with their early sovereigns, which it is more probable that they borrowed from the Indians than from the Babylonians; and thus it is still more likely that the Chinese learned the period of 60 years from them.

Pere Premare, in the above cited "*discours preliminaire*" page LXVI, explains the existence and origin of this 432,000 years period in China :—

" The dynasty of the Tien hwang had thirteen kings " of the same name, and for this reason they are called " brothers, and to each one of them has been attributed " 18000 years of life, or for their reigns."

The total of these 13 reigns is 234,000 years.

At the same and following page, Premare, writing of the Ti-hwang or the sovereigns of earth ; says :— " there are eleven kings of the same name. Each one of these eleven kings has either reigned or lived 18,000 years, which makes a total of 198,000 years.

The total of these two lines of 24 sovereigns makes the 432,000 years above mentioned.

There are thus three nations, all claiming great antiquity, and having each a curiously similar tradition of a like imaginary period of time, during which their progenitors existed. As far as the Chinese are concerned, their books in which the description of this period is to be found, are generally supposed not to be more ancient than a few centuries before the Christian era, unless the opinion of the antiquity of the San hai-king be admitted as correct. It is thus mentioned by Premare, (Discours preliminaire page LXXIV); "The "San hai-king is a book so ancient that some persons "attribute it to the Emperor Yu, and others to Pe-ye, "who lived at the same time."

If this be so, the probability is not strong that the Chinese derived this legendary period direct from the Babylonians, but the greater probability is on the side of their having learned about it from the Hindoos; as they are known to have received a knowledge from them of many other matters referring to chronology and astronomy, near that time. Possibly there may have been also Babylonian or Bactrian oral traditions, on these subjects, floating about amongst the Chinese people, which were gathered up in the Taoist works, and in books like the San hai-king, just as the Confucian historians allege that they learned many things beside the contents of the Shoo-king, and Tso-chuen, and Bamboo Annals, from ancient popular traditions of

China, which had been orally preserved by the nation.

It is not however necessary to recur to the Babylonian usage of the sossos, or cycle of 60 years, to find the origin of a similar epoch in China; for it has been suggested by Dr. Chalmers, in his dissertation above quoted, page 97-98, that the Chinese may have derived their 60 years cycle direct from the Hindoos. He writes:—

"The first attempt to arrange the years in cycles of "sixty, is found in Sze-ma-ts'ien's historical records, in "a table constructed for the purpose of intercalation, "and extending over a period of 76 years, the first "year being B.C. 103. But instead of using the Chinese "cyclical characters, he employs words of two and three "syllables, which considered from a Chinese point of "view must be pronounced barbarous. We give the "names applied to the first 13 years. Perhaps some "one acquainted with the ancient language of the Hin- "doos, may hereafter be able to identify them. The "second word in each name has some connexion with "the planet Jupiter; and Sze-ma says, that *Sheh-te*, "(part of the first name) means Jupiter.

"His commentator adds, that Jupiter belongs to the "east, and is the essence of wood, the spirit of the green "God, Ling-wei-jang.

"This last word is one of six meaningless trisyllables "applied to the God of the north pole, and the five "elementary Gods during the *Han* dynasty, for which "also we must seek a foreign origin."

These names of years, in *Sze-ma-ts'ien's* history, probably of foreign origin, according to Chalmers, are as follows;

Yen-fung.	She-te-kih.	Shang huen.	Chih-funjo.
Twan-mung.	Tang-oh.	Chaou yang.	Tsoh-goh.
Yew-chaou.	Chih-seu.	Hung gae.	Yeu-now.
Keang-woo.	Taman-loh.	Shang chang.	Ta-yuen-heen
Too-wei.	Tunt-sang.	Yen-fung.	Kwan-tun.
Chuh-le.	Hee-hea.	Twan-mung.	juy-han.
	Yew-chaou.		Shete-kih.

There is another method of writing these names, used by E. Souciet, which is here subjoined for reference.

Yen-feng.	Shih-ti-ko.	Shang-huen.	Chih-feng-jo.
Tuan-meng.	Shan-yu.	Chao-yang.	Tso-ngou.
Yu-chao.	Chih-tsu-rsu.	Huen ai.	Yen-mou.
Chiang-wu.	Ta-mang-lou.	Shang-chang.	Ta-yuen-hsien
Tu-wei.	Tun-chiang.	Yen-feng.	Kuen-tun.
Chu-li.	Hsieh hsieh.	Tuan-meng.	Jui-han.
	Yu-chao.		Shi-ti-ko.

Dr. Chalmers continues. "Various attempts have "been made to analyse the second word Sheh-te-kih, "(in Cantonese, Ship-tai-hak.) Is Ship-tai intended to "represent the Hin-doo name, of Jupiter? *Vrishaspati* "(or *Brhaspati*); and is *hak* (Hindoo *Chakra*) the Hin- "doo character or cycle, applied to the first year of Sze- "ma-ts'ien's table, and to determine which of the 12 "branches it ought to be identified with? Sze-ma him "self, besides saying that *Sheh-te* is Jupiter, explains the "term to mean the place of that planet in the ecliptic." N. B. Schid in the *Zend* language, stands for Jupiter.

"In a work called the "Classic of stars," Sheh-te "is said to denote a" spiritual instrument of western "nations." Brhaspati means originally "Lord of Worship," see page 279 of Burgess translation of the Surya siddhanta. It means also the planet *Jupiter.* (page 279-275.)

"Now this confusion of words without knowledge is "easily accounted for on the supposition that the cycle "of 60 years was introduced from the Hindoos, to "whom the Chinese were indebted in the time of Sze-"ma-ts'ien, for other things even more important."

The above suggestion of Dr. Chalmers is of great assistance in this enquiry, for the Hindoos had a cycle of 60 years which they called *the cycle of Jupiter*, and to each year of which they assigned a name in the same way as Sze-ma-ts'ien gave special names to each of the years in his cycle, and which according to Chalmers, he connected with some calculation of the planet Jupiter. It is therefore evident that the cycle of Sza-ma-ts'ien was probably a transcription of the Hindoo cycle of Jupiter.

Referring to this cycle, Mr. Cowasjee Patell, in his work on chronology, page 44 remarks:—

"The *Vrihaspati Chakra* or cycle of Jupiter, is regarded "as one of the most ancient chronological systems of "all Asia. The origin of the cycle of Jupiter is not "known." Warren, San Kalita, page 199, writes:— "I have not been able to discover the origin of the 'practise of reckoning time, with reference to the revolu-

"tions of the planet Jupiter, but it is no doubt very "ancient."

Possibly it may have come to the Hindoos from the Babylonians, together with other astronomico-chronological, or astrological periods, and astronomical knowledge that they derived from that source, and which have been pointed out by Guerin, (Astronomie Indienne. Paris 1847, page 183.) Possibly the *sossos* or 60 year cycle of the Babylonians might have been a cycle of Jupiter, but in any case the coincidence merits consideration.

Bailly, "Traité de l'astronomie Indienne et Orientale," page 276, says that:—"Just as the period of 12 years "is related to the movement of Jupiter, and his return "to the same aspect from the earth, so this period of "60 years is that which brings about the same con-"figurations of Jupiter and Saturn with the earth. It "is the phenomenon, often seen, of these two planets "being found in near conjunction with each other, and "in opposition to the sun, that doubtless has sufficed to "fix the period of 60 years," and at page 331 of his "Histoire de l'astronomie ancienne" he explains this. "Jupiter, seen from the earth, returns to the same point "in the zodiac, at the end of 12 years and five days, "and he returns for the fifth time in 60 years and 25 "days. Mars, finds itself equally in the same position, "with regard to the earth, after 15 years less 18 days; "and also after 60 years less 72 days. Saturn only "returns to the same degree of the ecliptic at the end

"of about 29 years, and it is evident from the slowness "of its movements, that at the end of 60 years it is not "far off from the same point. The period of 60 years "seems to be that of the conjunction of the three men- "tioned superior planets, in the same sign of the zodiac, "and even within a narrower space of it. The ancients "especially the orientals, paid great attention to the "conjunction of the planets with each other, and when "these planets nearly met each other, which they did "adout every 60 years, they retained the memory of "the event."

This would give a very different story for the origin of the 60 years cycle, from the legend of Hwang-ti having instructed Tanao to observe the elements, and having thence invented this period.

The Chinese have no positive records of a 60 years cycle of Jupiter having been known by them anciently. So there is nothing to support the notion that the Hindus derived it from the Chinese.

This cycle of Jupiter forms part of the Hindu astronomical system. It is specially mentioned in the "Sûrya Siddhanta" Burgess' translation chap: 14, 12.

"In chapter XII. 8 of this book, Maya makes en- "quiries as to "how many modes of measuring time "(mâna) are there" and in Chap: first mentioned, it is stated:—

"1° The modes of measuring time (mâna) are nine, "namely those of Brahma, of the Gods, of the fathers, "of Prajâpati, of *Jupiter*, and solar, (saura) civil,

"(savana) lunar and sidereal time." The verbal connexion between the Hindoo measurement of time called Saura, (one Chacra year of 360 days, see Warren op: cit: page 202,) and the Chaldean period for the same purpose, called *Saros*, presents a coincidence that merits attention.

"2° Of four modes, namely solar, lunar, sidereal, and "civil time, practical use is made amongst men; by "*that of Jupiter is to be determined the year of the* "*cycle of sixty years*: of the rest, no use is ever made."

In chapter I. 55, it states, "Multiply by twelve the "past revolutions of Jupiter, add the signs of the "current revolution, and divide by sixty, the remainder "marks the year of *Jupiter's cycle* counting from Vijaasa" and in a note to this passage, it is stated:—

"This the rule for finding the current year of the "cycle of sixty years, which is in use throughout all "India, and which is called *the cycle of Jupiter*, because "the length of its years is measured by the passage of "the planet by its mean motion through one of the "signs of the zodiac."

"It has not been satisfactorily ascertained, so far as "we are aware, where the cycle originated, or what is its "age, or why it was made to consist of sixty years, includ-"ing five whole revolutions of the planet. There was "indeed also in use a cycle of 12 Jupiter's years, or the "time of one sidereal revolution," (see below XIV, 17)."

As it may be useful for comparative study, or for reference, the annexed table of the cycle is here

subjoined. It is taken from Cowasjee Patell's Chronology, page 47.

Besides this cycle of 60 years, the Hindoos seem to have also had other periods of time composed of *sixty* elements. In professor Whitney's notes to Colebrooke's essay on the Veda, printed in Vol. II. page 125 of "Life "and Essays of H. T. Colebrooke" it is stated when describing one of the Jyotisha treatises, "Its special "subject is the Yuga, or lustrum, which is made to "begin at the winter solstice, and to consist of 1830 "days, or of *sixty solar months*. This is equivalent *to* "*five years* of twelve months, with an extra month, all "of thirty days each, and such a reckoning some of the "oldest Vedic references seem to imply."

"The Jyotisha does not teach any division of the "hour (muhúrta) into *sixtieths*, but only into half hours, "or *sixtieths of a day*. (Nádiká.")

"Bailly, also observes, op: cit: page 70:—"The "Roman *lustrum* of five years, would be a period of 60 "months: an intermediate period between the period "of 60 days, and 60 years."

Colebrooke himself writing on this Jyotisha, same volume, page 97, states:—

"This ancient Hindoo calendar, is evidently the "foundation of that, which, after successive corrections, "is now received by the Hindoos throughout India. "The progress of these corrections may be traced from "the *cycle of five* to one of *sixty lunar years;* and thence "to one of sixty years of Jupiter," and in a note to

" this passage he adds. This cycle of *five years*, is " mentioned by the name of Yuga, and is stated to be " the basis of calculation for the larger cycle;" and " that of 3600 *years*, deduced from one of sixty, " (containing twelve simple Yugas) *is denominated the* " *yuga* of *Vakpati*, whence the Yuga of Prájánátha " (or 60 times 3600 years,) containing 216,000 years " is derived, and twice that constitutes the Kali-yuga " or 432,000 years." This Kali-yuga was thus derived " from *Vakpati*, or Yuga of 3600 years, just as the Chaldean period of 432,000 years was derived from the Saros of 3600 years.

See also Guerin, "Astronomie Indienne" page 183.

In volume III, of Colebrooke's work, page 319, in note by Sir E. T. Colebrooke, *a division* of *the day into sixty parts* by the Hindoos is mentioned, and it is all the more interesting in relation to these researches, inasmuch as it shows a remarkable connexion, between the period of 60, and a period of 28, which may be of service later on, when the 28 Chinese Sieu will require to be noticed with reference to the question of cycles.

The text mentions:—"Astrologers also reckon *twenty* " *eight* Yugas, which correspond to the twenty eight " nakshatras, or divisions of the moons path."

The note mentioned, has:—" If Asivini correspond " with A'nanda or the first Ghurri of Sunday, and the " list be carried through the *sixty* Ghurris of the day, " the list of *twenty eight* mansions will have been gone " through *twice*, and the four first on the list three

" times—Mrigasiras is the fifth Mansion, and thus " becomes regent of the first Ghurri of Monday.

How the Chinese used a period of 60 for numbering days or hours will be seen later on.

Bailly, Traite de l'astronomie Indienne et Orientale, page LXXXXVI, says :—

" The Indian interval of two months, called the " Rondou, is the period of 60 days, known in China. " This revolution or year of two months, was known and " employed in Egypt." It is therefore improbable that the cycle of 60 days was a Chinese invention. Meanwhile it may be looked upon as certain, that the cycle of 60 years had an historically proved existence in Babylonia and India, long before any similar existence of this period can be shown by historical evidence to have existed in China. Although the maxim *post hoc, propter hoc*, is not conclusive absolutely, it at least shows this, that the Chinese cannot claim for the employment of this chronological-cycle, any priority over the other nations, who undoubtedly possessed and anciently used this system of 60 years as a measurement of time. It should however be remembered here, that the Hindoo names of the years in the 60 year cycle, are all different from each other ; whereas those used in Sze-ma-ts'ien's table, are repeated as regards half of each name, after every ten years ; and after every twelve years for the other half of the name ; just in the same way as the ordinary modern Chinese cycle of 60, is formed by combination of the ten *Kan* and the twelve *Chi*.

This is all the more remarkable, in as much as it shows a foreign series of names equivalent, to those contained in the *stems* and *branches* of 10 and 12, from which the Chinese say they derive their 60 year cycle; so that the modern theory for numerically composing the 60 year cycle, is only in accordance with the *form* of Sze-mats'iens arrangement of it, as far as this combination of two series of names goes, for producing a composite name for every year; but it is strikingly different in the ten and twelve *names* that Sze-ma-ts'ien used for this purpose.

At the same time, as Sse-ma-ts'iens system does not exactly follow Hindoo names, though it is certainly of foreign origin; and as it is only slightly probable that it is derived from the Hindoos; this latter circumstance may show that Sze-ma-ts'iens names probably have their origin in a still more ancient source, such as the Babylonian Sossos of 60 years. It should however be borne in mind, what Dr. Legge states, (page 13, supra,) viz, that it is "very questionable whether "these foreign names for the years were used anciently in China."

Before however proceeding further in investigating the source whence the Chinese, or Hindoos, derived this Sexagesimal period of years, it may be interesting to previously examine, whence the Chinese obtained a knowledge of the period of 76 years, mentioned by Sze-ma-ts'ien, and which he ostensibly connects with the 60 year cycle.

It must be obvious to every one, that this period of 76 years is substantially identical with that which is known as the period of Callippus, who lived in the 4th century B.C. and who was a contemporary and acquaintance of Aristotle. This Callippic period, which commenced at the summer solstice of the its first year, was not an originally devised simple period, formed at first sight, from some well known relation of our measurement of time with the motions of the heavenly bodies. It was rather the consequence of a previously known period of 19 years, which it is said, was invented by Meton, in the 5th Century B.C., but which having been found inadequate to comprise an exact dividable number of solar revolutions, when compared with a complete series of lunar epochs; was rendered more correct for the purpose in view, by Callippus increasing this 19 years period to one of four fold length, or of 76 years; because this was found to bring the average comparison of lunar and solar years to be of less divergence, and to make them more nearly coincide with each other, at the end of that time.

In Smith's dictionary of Bibliography at the word METON, it is justly observed, "Whether Meton was "himself the inventor of this remarkable period, or whe- "ther he found it elsewhere cannot now be known;" and thus its nominal adscription to Meton need be no obstacle to searching for its first use in still more remote times.

In point of fact, the period of 19 years was known to Numa Pompilius, two centuries earlier than it was used

by Meton, according to the testimony of Livy 1. 19; and whatever may be objected to Livy's authority on the personal connexion of Numa with this period, (see "Dyers history of the early kings of Rome,") the fact will always remain, that the 19 years period was considered in Livy's time, amongst the Roman people, as having existed from the earliest times of their monarchy; and that even should no certain fixed period be properly yet assigned to its first invention, or the commencement of its use amongst the Romans, it is still very probable that it had still existed before that early chronological period of Numa's connexion with Rome.

Livy's attribution of the use of this 19 year period to Numa Pompilius, has however a circumstance connected with it, which makes his testimony peculiarly interesting for the investigation now being pursued; in as much as Livy states, that Numa used the 19 years period for the purpose of assigning the order of the intercalary months, (seven of which are required to be spread over the 19 consecutive years,) so as to combine the lunar and solar years, and make them meet at the end of that time.

What is specially interesting in the present enquiry, is, that the use made by Numa of the 19 years period, for placing the intercalary moon, should be identical in purpose with the use which the Chinese make of the same term of years; and this similarity of usage, could it be proved that it had existed in China, any where near the time of Numa, might afford proof that the Chinese had derived their knowledge of this period,

from the same source whence Numa derived it; unless it be maintained that either the Chinese learned it from Numa, or that Numa learned it from the Chinese ; both of which hypotheses have no historical foundation, as there is strong historical evidence to prove that the Roman knowledge of astronomy and its coguate sciences, were derived from the Babylonians, which makes it highly probable, if not certain, that the Roman knowledge of the period of 19 years, and its practical use, was also obtained from the same Babylonian source from whence they got their notions about the planets and astronomy. The fact of the Babylonians use of the year of 360 days with five days extra, connected with the exactitude of their observations, show that they must have known the 19 years period, as the adjuster of their calculations, which are supposed to be as ancient as B.C. 2233.

As regards the time when the Metonic cycle was first known in China, the following extracts from students of Chinese history, may afford some light on the introduction of that cycle, and the cycle of 76 years, mentioned by Sze-ma-tseen.

Dr. Medhurst in his translation of the Shoo-king, page 8, states :—"a commentator of the period A.D. "1210, explains the use of this 19 years period :"— "in 19 years there would be seven intercalary moons, "which would make the solar and lunar years exactly "even, and constitute a complete cycle :" and he adds, "the ancient year has 12 months, each consisting of 30

"days, which makes 360 days as the usual period of "the year."

"It seems clear that this period of 360 days for one "civil lunar year, and the difference between this and "the true solar year, caused the necessity of adopting a "cycle of 19 years, to bring the solar and lunar years "in accord at the end of such period; but the com- "mentator *does not say when this co-arrangement of the "lunar and solar years commenced to be used.* It is "presumed by the commentator, that the introduction "of the 19 years cycle was made in Yao's time. It "must have been very ancient, and at least as ancient "as the Babylonian observations, for they made their "lunar year consist of 360 days only. Their Sarus was "3600 days, or 10 years of 360 days each, though they "had a year of 365 days, by intercalating five super- "numerary days, at the end of the lunar year."

Dr. Legge in his Classics, Vol. I, part I. page, 22, in a note, writes :—

"Previous to the Han dynasty, Chinese history does "not furnish us with details on the subject of intercala- "tion —In the the time of that dynasty, however, we "find what is called the Metonic cycle (19 years) well "known. It is not mentioned as any discovery of that "age—No doubt it came down to the Han from the "Chow, and was probably known in China, long before "Meton reformed the Athenian Calendar, according to "its principles, B.C. 432."

Pere Souciet III, 49 states :—all the historians and

" astronomers avow, that toward the end of the Chow " dynasty, astronomy had fallen into a great decadence ; " the intercalation was neglected," which entirely confirms Dr. Chalmers in the statement:—"For an " instance of the intercalary month placed at the " end of the year, on three successive occasions, the " reader is referred to Sze-ma-ts'ien's Chronological " tables. Tsin dynasty 201, 204, 207, B.C."

Dr. Chalmers, in the dissertation already quoted, at page 99, writes :—

" During the Chow dynasty, intercalary months " were placed at irregular intervals, but most frequently " at the end of the year. The Chinese seem even then " to have had no idea of the proper interval between " two intercalations."

It would appear therefore, that the probability of the 19 years cycle being known to the Chinese, during the Chow dynasty, as above mentioned by Dr. Legge, can only be very slight ; and there is no evidence of it being then used for the intercalation of the moons. The contrary even is stated by Dr. Chalmers ; in the above passage in his dissertation on the subject.

Pere Souciet, III. page 15, says :—"that the astronomers of the Han dynasty *not did even understand what they wrote about the cycle of* 19 *years*" so that they must have had no experience that its previous existence in China was scientifically known.

It may be noted here, that the period called the Ki of 1520 years, which was invented during the Han

dynasty, is equal to 80 periods of 19 years, or to 20 Pou, or periods of 76 years, according to the Sse-fen: (See Souciet, II, 22:) and that the *Yuen* or period of 4560 years, is equal to 240 of the same period of 19 years, or to 60 of the periods of 76 years, or the *Pou*. Souciet II, 22 says, that *Li-fang* invented this period of the *Yuen*, of 4560 years, which consisted of 3 Ki of 1520 years, but looking at the tendency of the Chinese to classify every measurement of time by its relation to 60, this seems to be the most likely composition of the *Yuen*.

This *Yuen* period, however, is attributed to the Han astronomers, by Souciet, loc: cit: and II, 13, who states regarding this composition of periods:—"The "astronomers of the Western Hans, marked a period of "4617 solar years, composed of 243 cycles of 19 years "each. This period is called Yuen (source). The number "81 was also taken to obtain 81 cycles of 19 years each, "which made up a period of 1539 years. This period "was called Tong, (commencement). Three of these "Tong made up 4617 years or the above mentioned "period called *Yuen*." And at page 16:—Souciet mentions another period:—of 14, 3127 solar years, which comprised 31 periods of 4617 years each, or 31 *Yuen*.

The astronomy called Sse-fen, or 4 parts, which was composed by *Li-fang*, during the reign of the emperor Tchang-ti, somewhere about 85 A.D., and according to Souciet, page 21, II; "examined the properties of the "cycle of 19 years. Li-fang knew that the cycle of "19 years is composed of 235 lunar months, during

" which the moon made 254 revolutions. The difference
" between 254 and 235 is 19. Divide, said Li-fang,
" 254 by 19 and the quotient is 13+7 parts of 19.
" Thence he concluded, that the proper and diurnal
" movement of the moon, is 13 Chinese degrees, and 7
" parts of 19. Li-fang, therefore, seeing that the cycle
" of 19 years was imperfect, invented one of 76 years,
" composed of 4 cycles of 19 years each. He expressed
" this new period by the character Pou."

The ground work therefore of Sze-ma-ts'ien's calculation respecting the 60 years cycle, and the period of 76 years, with which it is bound up, must have been of very close proximity to his time; and the 19 year cycle also. Whence the Chinese got their knowledge of those periods, there is no evidence of: Sze-ma-ts'ien supposes, that they were to be referred to Yao's time, just as the Chinese refer other astronomical data to the same source; but there is as little reliability as to the one, as to the other; and consequently the only way out of the search is to attribute this knowledge to the same Hindoo source, as that to which the 60 years cycle is traced; unless some vague tradition, hardly understood by the Chinese, had lingered with them amidst the other ancient knowledge of the heavens that they possibly derived from the eastern Iranians of Bactria. At any rate, there is no evidence of the Chinese having had any knowledge of these periods, before the 3rd century B.C. Souciet II, 29, has a remarkable passage on the Chinese fictitious Calendars, which

are the sources of the mythical chronology that is now being examined:—"It was in the time of the "western Hans that the six calendars were published, "which at first were given out as being ancient. The "first Calendar was that of Hwangti; the second of "Tchuen Hiu, the third of Yu, the founder of the Hia "dynasty; the fourth of Tching Tang, the founder of "the Shang dynasty; the fifth of Vou-vang, the founder "of the Chow dynasty; the sixth of Tcheou-kong, "prince of Lou. It was not long before a suspicion "arose, at least about the authenticity of these calendars, "which were otherwise badly composed; and they are "very generally considered to have been the works of the "Hans," and at page 31, after stating that the chief use of astronomy was for astrological purposes, and that the mysterious numbers of the 8 Kwa of Fu-hi, were the basis of their calculations, he adds:—"The numbers "of heaven, of the earth, and of space, were the basis for "finding the numbers of the 8 great Tsie-ki, of the 24 "Tsie-ki, of the 28 constellations, of the cycle of 19 years, "of the solar and lunar years, and of the intercalation. "All this labour was taken in order to find out the "epochs for the days, and the years, of the cycle of 60."

This passage throws some light on the reason why Sze-ma-tsien mixed up the 76 years, or the quadruple of 19 years with the 60 years cycle. Dr. Chalmers, loc: cit: writes:—"Sze-ma-tsien does not indeed tell us that "they became acquainted with the cycle of Calyppus "either through the Bactrians, or Hindoos, but there is

"scarcely a shadow of doubt that this was the case. "In no other way can we account for the sudden "appearance in Tseen's history, of a method so far in "advance of anything known before in China."

The most therefore, that can be deduced from the coincident similarity of usage, between the Romans and Chinese, in matters of astronomy, and cognate subjects, would be, that the Chinese as well as the Romans also, derived their knowledge of the 19 years period, from the Babylonians direct; but as will be presently seen, the fact of the Chinese having obtained knowledge of it but recently, when compared with Babylonian ancient astronomical experiences, makes it more probable that the Chinese rather learned it from Bactria, to which place it had doubtless been made known direct, through the Assyrian and Persian traditions, or through the Greeks, who had themselves derived it from the Chaldeans of Babylonia.

There may be something hereafter to be adduced, about the actual use of the 19 years cycle in Babylonia at a still more remote period, than that of its known introduction into China.

Meanwhile the similarity observable between Roman and Babylonian astronomical science, may serve to elucidate still further the derivation of the Roman knowledge on this subject; and as there is also a great similarity between the Roman and Chinese usages, on kindred matters, the mutual coincidence of both Roman and Chinese special science with Babylonian knowledge,

can only be reasonally accounted for, by attributing the original source of both nations, knowledge, on this point, to Babylonia, as its remote common origin.

The Marquis Fortia d'Urban, in Vol. II, of his "Histoire antidiluvienne de la Chine," devotes a whole chapter towards comparing the similarity between the Roman and Chinese calendars, and other matters connected with them; and it is principally on his observations, that the present remarks on this subject are based.

The first thing he brings to notice is, that the winter solstice of the Romans, was indicated at the 8th of the Calends of January, and that this winter solstice was the starting point of the year with the Romans, just as it was in primitive times with the Chinese. This fixation of time is attributed to the Chaldeans *"Brumale "solstitium sicut Chaldæi observant."*

The opinion of the Chaldean origin of this Roman custom of beginning the years, is strengthened by the fact, that the Romans took their twelve superior divinities, which they identified with the 12 signs of the zodiac, from the the Chaldean system of 12 superior deities, presiding each over a month of the year, and over a sign of the stellar zodiac. The Latin poet Manilius, lib I. verse 24, narrating the origin of the Roman astronomy, places it among the *gentes oriente sub ipso quas secat Euphrates."* Pere Pingré, points out in a note, that this line refers to Babylonia, and in lib: II. verse 426, and following, gives a list of the corresponding Roman divinities which preside over the months, and

which are the names of Chaldean divinities translated into those of corresponding Roman deities. (See Pingre's edition of Manilius, Vol. I, page 165, et sequ :)

The date at which the Romans obtained this knowledge from the Chaldeans, could not have been earlier than 745 B.C. or the date of the foundation of Rome, and it does not follow from the coincidences already remarked, that the Romans got it direct, at or after that time, from the Chaldeans.

Indeed, as the Romans primitively had only 10 months in the year, it could only be when the year of 12 months was introduced, that they adopted the Chaldean system.

They might have got it from the Etruscans, who also had these 12 superior deities; and the Asiatic origin of the Etruscans, ("See Ellis's" Asiatic affinities of the old Italians") whether it be Armenian, or Lydian, renders it probable that they got it through their Asiatic ancestors from the Chaldeans; as it seems to be an axiom amongst modern experts on this subject, that Chaldean Babylonia was the original source of all astronomical science. F. Lenormant, considers this established by historical evidence. Sayce, "History of Babylonia," at page 32, states what is more interesting, in the general discussion of Chinese Chronology, "Babylonian literature comprised chronological tables," which may one day be deciphered, and evince the system there used for computing, and according the times and seasons.

The Chaldean origin, either direct or indirect, of the astronomical system used by the Romans, seems thus undoubted. The next resemblance between the Roman and Chinese Chronological systems, is noticeable in the division of the year, which was the primary object of all ancient astronomical science.

The Chinese, as is well known, divide the year into 24 Tsie-ki, supposed to be of 15 days each, and practically the Romans did the same.

It cannot be said, however, that each Tsie-Ki is exactly 15 days; for that would only make up a year of 360 days; and this difference of days between that and the year of 365 days, must either have been divided amongst the 24 Tsie-ki, or added at the end of the year as epagomonal days.

The Chaldeans also divided the year into 24 parts, and the same division of the year existed amongst the Persians. Sayce, Babylonian literature, page 54, has:—"The "month was divided into two halves of 15 days each, these "being further subdivided into three periods of five days."

In the Chinese arrangement, each Tsie-ki is marked with characters, indicating meteorological phenomena, and the commencement of seasons, and half seasons. Similar indications are to be found in the calendars of Ptolemy, and of the Romans; only these are more precise than the Chinese calendars, as they marked the cold, heat, rain, different winds, tempests, etc., by constellations, the rising and setting of which, were synchronic each year with those phænomena.

The 24 Tsie-ki are thus given in Medhurst's Shoo-king appendix page 409 :—

1.	8 Jan. . .	Seaou-han. .	Little cold.
2.	21 „ . .	Ta-han	Great cold.
3.	5 Feb. . .	Leih-ch'hun.	Commencement of spring.
4.	21 „ . .	Yu-shwuy. .	Copious showers.
5.	5 March .	King-chih . .	Stirring of insects.
6.	22 „ .	Ch'hun-fun .	Vernal equinox.
7.	6 April. .	Tshing-ming.	Fine clear season.
8.	22 „ . .	Kuh-yu	Corn refreshing showers.
9.	7 May . .	Leih-hea . .	Commencement of summer
10.	22 „ . .	Seaou-mwan.	The minor completion or wheat harvest.
11.	7 June . .	Mang-chung.	Rice planting season.
12.	22 „ . .	Hea-che. . . .	Summer solstice.
13.	8 July . .	Seaou-shoo .	Little heat.
14.	21 „ . .	Ta-shoo. . . .	Great heat.
15.	9 August.	Leih-tsew . .	Commencement of Autumn
16.	24 „ .	Ch'hoo-shoo.	Relaxation of heat.
17.	8 Sept. . .	Pih-loo	White dews.
18.	24 „ . .	Ts'hew-fun .	Autumnal equinox.
19.	9 Oct. . .	Han-loo. . . .	Cold dews.
20.	21 „ . .	Shang-keang	Hoar frost appearing.
21.	8 Nov. . .	Leih-tung. .	Commencement of winter.
22.	23 „ . .	Leaou-seue .	Little snow.
23.	8 Dec. . .	Ta-seue. . . .	Great snow.
24.	22 „ . .	Tung-chi . .	Winter solstice.

The numeral order followed by Dr. Medhurst, was presumedly to make the Tsie-ki correspond with the

present year system; but in reality the first in order of the Tsie-ki, is the last in Medhurst's list, or the 24th, which is the winter solstice. It is the Pere Souciet, in his "observations astronomiques" Vol. III. page 70, who testifies to this. "The first Ki of the Tsie-ki begins at the winter solstice."

Now by comparing the Roman and Chinese calendars, it will be observed that the division of the year by seasons, corresponds in both, to the same day. This may be remarked by comparing the two calendars for each 45 days of the year, or from half season to the next half season, beginning from the winter solstice.

The 47th day from that time, or on the 5th nones of February, the Roman calendar marks the beginning of spring, and on the 44th day after that, it marks the vernal equinox.

This is just what the Chinese calendar designates by the division of spring, and it thus makes 6 Tsie-ki, or 90-91 days, equal to one season.

Thus from the Winter solstice, or 22nd December, to end of month, there are, 9 days.
In January, there are.. .. .. 31 „
and hence to the beginning of spring, or 5th of February, there are .. .. 5 „
which altogether make, 45 days. .. .. .. „
In February, remain .. .. 23 „
In March, to the vernal equinox, there are 22 „
or a total of days. 90

Varro, however, marks the beginning of spring, precisely at the 45th day after the winter solstice, exactly the same as the Chinese do.

The Roman calendar then marks the beginning of summer, at the 45th day after this; and the Chinese calendar also marks the commencement of the same season, after 3 more Tsie-ki, of 15 days each, or at the 10th Tsie-ki of the year.

Here then is an absolute accordance between the Roman and Chinese arrangement of the seasons; and it is to be noticed that this Roman Calendar, is the old calendar, or the Fasti, of Numa Pompilius, who it is supposed, derived it through the Sabines from the ancient Chaldeans.

The 46th day after this, or the 8th before the Calends of July, the Roman Calendar marks the summer solstice. Similarly the Chinese Calendar, after 3 Tsie-ki, of 15 days each, or at the 13th Tsie-ki, also marks the term of summer, just as it had marked the term of winter, or the winter solstice at the 1st Tsie-ki. The two terms above mentioned, are those of the apparent motion of the sun in declination, or of its travelling from south to north, or from north to south.

The Roman Calendar marks them of 91 days each, or 182 days in all.

The Chinese mark, 182 days, 62 Ki, 12′.

Pere Souciet, in his "observations astronomiques, &c., tome III, page 72, thus explains the Chinese calculation of the two seasons, from the winter solstice to the

summer solstice. "The sun travels by ascending. This "is the season of Yng. Divide the Yng into two "parts. The first will be Yng-tsou, from the winter "solstice to the equinox of spring; 88 days, 90 Ki, 92′. "The second will be Yng-mo, from the equinox of "spring to the summer Solstice; 93 days, 71 Ki, 20′."

To understand this better, it should be remembered that the Chinese anciently divided the day into 100 Ki; each Ki had 100 minutes. This usage lasted until the Jesuit Pere Schall, according to common report, persuaded them to divide the day into 24 hours. This report however may not be quite correct, as Dr. Chalmers in his already cited dissertation, page 96, says:—"according to native authorities, the duodecimal division of the day was not adopted till the time of the Han;" so that the Chinese had also that method before Pere Schall's time. In fact, the two methods, of the *Ke*, and the *hours*, were both in use. In the "Memoires" tome XIII, page 230, it is stated:—

"The twelve Tchi are also used to measure the hours, to each of which the name of a Tchi is given. The Chinese hours contain two of our hours." And the Pere Souciet, tome III, page 52, in a note, mentions:—

"The day and the night have twelve hours, which formerly made up one hundred Ki. Each hour had 8 Ki and some minutes. Each Ki had 100′, each minute had 100″."

To continue the comparison of the calendars; both the Roman and the Chinese mark the beginning of

autumn 45 days after the summer solstice; and 47 days after this, the Roman calendar marks the autumn equinox; and the Chinese calendar marks the division of autumn, after 3 Tsie-ki, or 2 days sooner than that of Rome; but 46 days after this, the Roman calendar marks the *beginning of winter*, and 45 days from the division of autumn, the Chinese calendar also marks the beginning of winter; and again, 45 days after that, it marks the winter solstice, at the point whence this comparison started, and where the two calendars reunite. The number of days in the Roman calendar, from the summer to the winter solstice, is 183, which with the 182 previously accounted for, makes the year of 365 days. Fortia d'Urban justly remarks, on this striking coincidence, vol. II, page 86, "This accordance between the calendars of two peoples, situated at the two extremities of the ancient continent, is at the least, very remarkable. It seems that the centre of observation was in Chaldea, from whence Numa and the Chinese received these division of time, or kal, which are found both in the Chinese and Roman calendars."

Besides the above noticed similarity, between the Roman and Chinese calendars, relative to the division of the seasons of the year, there is also another similarity, in the annual meteorological indications, which is all the more remarkable, owing to the difference of climate, between Italy and China.

In the 2nd Tsie-ki, the Chinese mark *Little cold*, and in the Roman calendar, the corresponding day is marked

continui dies hiemant. In the 6th Tsie-ki, it is marked *copious* showers. In the Roman calendar, the same day is marked *Pluvia.* In the 9th Tsie-ki, the indication is, corn refreshing showers; and in the Roman calendar, the previous day marks *Dies humidus.* In the 11th Tsie-ki, the period is marked "the minor completion, or wheat harvest, or abundance. The Roman calendar has the Cornucopia of Amaltheus. In the 14th Tsie-ki, it is marked *Little heat.* In the Roman calendar, two day previous, it is marked, *calor.*

In the 15th Tsie-ki, the Chinese have great heat. The Romans two days after, mark *caligo Æstuosa.* In 16th Tsie-ki, Chinese use relaxation of heat. The Romans have, *rain.*

The 20th Tsie-ki has *cold dews.* The Roman date is *rain.*

The 21st Tsie-ki, has, hoar frost appearing. The Roman calendar notes. *Hiemat cum frigore et gelicidio.* With these above mentioned similarities, existing between the two calendars of Rome and China, it seems surprising, that the 60 years cycle, which the Chinese assert was used by them simultaneously with the 24 Tsie-ki, was not used by the Romans also, conjointly with their own calendar—It would appear that the 60 year cycle was not practically known to the Romans, or other western peoples at that time, though Diodorus Siculus mentions it as an ancient institution.

It has been already mentioned that it was known to the Greeks.

Fortia d' Urban, in explanation of this, vol. II. page 77, says:—"there was never anything similar to it in " the west, and the origin of it must be sought for in the *east.*"

The Romans calculated their chronology by epochs of five years each, and they do not seem to have made any use of that of 60 years ; possibly because it did not suit them, but their lustrum of 5 years has an affinity with oriental measurements of time, that establishes a curious connexion between them. It has been already seen that the Hindoo 60 year cycle of Jupiter, was not the only cycle connected with that planet. The original cycle of Jupiter, was one of only 12 years, which was the time of one sidereal revolution of that planet, as is mentioned in the XIV, chapter, paragr: 17 of the Surya Siddhanta. The length of one of the years of Jupiter, is measured by its passage, and by its mean motion through one of the 12 signs of the Zodiac.

The 60 year cycle of Jupiter was formed from that of 12 years, later on amongst the Hindoos, by using five of these primitive duodenary cycles, or five whole revolutions of this planet through the 12 signs of the zodiac, similarly to the Roman lustrum, which was composed of five of the solar annual cycles.

Burgess, in his translation of the Surya Siddhanta, page 27, states :—

" The Hindoos anciently had also a cycle of five " years, by which they appear first to have regulated " times, and which, with an intercalated month, anciently

" maintained the correspondence of the year of 360 days " with the true solar year".

" This was the Yuga, or age, which was originally " applied to indicate a cycle, or period, by means of " which, the conjunction or correspondence of discord- " ant modes of reckoning time, was kept up; and Yuga " still signifies, a lustrum of five years. Thus the " Hindoo cycle of 60 years, was formed from a Yuga, " or five of Jupiters revolutions," and at page 271, he further states:—" Jupiter's revolution in this " calculation is treated as if, like that of the sun, it " determined a year, and the 12 parts, each quite " nearly equalling a solar year, into which it is divided, " are by the same analogy, accounted as months, and " accordingly receive the names of the solar months." Burgess continues:—

" Warren has a brief account of the cycle of twelve " years, in Kala Sankalita p. 212 etc. On the Vrihaspati " cycle of twelve years. In the cycle of sixty are contained " 5 cycles of twelve years, each supposed equal to one " year of the planet. I only mention this cycle, because " I found it mentioned in some books, but I know of no " nation or tribe that reckons time after that account."

The names of the 5 cycles or Yugas, are as follows:

Sumi vatsara	presided by Agni
Pari vatsara	Arca
Idu vatsara	Chandra
Anu vatsara	Brahma
Udra vatsara	Siva

The names of the 12 years of this cycle, are those of the Hindoo lunar months, beginning with Karttika, &c. "According to both Warren, and Davis, As: Res: III. "217, etc., the cycle of 12 years is subordinate to that "of 60, the latter being divided into 5 such cycles, to "which special names are applied, and of each of which "the successive years receive in order, the titles of the "solar months. The appellations of the 5 cycles, are "those which properly belong to the years of the "lustrum of 5 years in ancient use."

The coincidence between this Hindoo usage, and the Roman 5 year lustrum, is therefore undoubted.

Warren, loc: cit: says, "he knows of no nation or "tribe making any use of this 12 years cycle but only "finds it mentioned in the books. The Southern "Indians, *if they ever did*, have long ceased to attend "to the months of the Chacra year."

This remark about the Southern Indians is significant; as, if they never used the cycle of Jupiter, it could not have been an original Turanian system, and the Chinese could not have known it from their own ancient traditions.

Cowasjee Patell, in his work on Chronology, page 46, states.:—"The true cycle of Jupiter being twelve years, "the Tibetans, in calculating their age count by this "cycle. In the ordinary affairs of life, they employ the "cycle of 60 years, each of which has its distinct name, "just as it has in India."

The Tibetan writers on the *Kala chakra* system, state "that the 60 year cycle, was introduced from India, about

" 1025 A.D. and that it was only introduced into India " 965 A.D. or 60 years more early."

Patell, at page 50, after quoting a French translation of *Albiruni*, about Indian cycles, has a note by Reinaud.

" The result of this passage, in its entirety, seems to " be, that the cycle of 60 was of recent institution, and " was peculiar only to a certain portion of India. The " calculation presented by Albiruni makes me believe " that it begun only at the year 959 of our era."

Bentley places Varaha Mihira, the supposed author of the Surya Siddhanta, in the 10th Christian century, but neither his theory, nor that of Patell, Reinaud, and Bentley are to be relied on, in this point; for the Surya Siddhanta has been shown to be of no more recent date than 346 A.D. by astronomical comparisons of the time of the vernal equinox, mentioned in the 8th chapter of that book. See Guerin, Astronomie Indienne, chap. III. page 21, who there proves that the Surya Shiddanta was written in Sanscrit verses, by a Brahmin called Shourdijyo, at that date, and hence its name; but it contains a record of the supposed revolutions by the *sun* itself, to *Moyo*, (or *Maya*, see Surya, Cap. 1. pag: 2) made long before they were thus recorded by Shourdijyo: and so the tradition of the 60 years cycle, was not in any way as modern as Patell and others would insinuate.

If Reinaud's and Albiruni's supposition were true, it would place the origin of the 60 years cycle in China, at a still more modern date than need be assumed; for

if it came so late into Thibet, from India, it would have travelled east into China still later; unless recourse is had to the gratuitous hypothesis, that the Hindoos received it from China, and afterwards transmitted it to the Thibetans.

It is remarkable, that the Thibetans give a different simple name to each year of the 60 years cycle, (which are a translation from the Sanscrit names) just as the Hindoos do; but they also use names for the years of the cycle, which are a Thibetan translation of the Chinese composite names.

Patell, page 47, op: cit: calls attention to the discrepancy between the commencement of the Indian and Chinese cycles, as the 1st year of the Indian cycle corresponds to the 4th year of the Chinese cycle; and he urges this as a proof that the two cycles are not connected, or derived from each other.

This may be the case, if notice be only taken of the names, or order of each year, in the cycle; but it seems clear that the Chinese and Indian cycles are both founded on a certain period of the planet Jupiter's motion, and an examination of how the different insignificant ways in which the two nations worked out, or indicated their cycles, each according to their own peculiar system, may probably show that the cycle of 12 years, which is the common foundation of both of them, belonged originally to the system of some other more primitive nation, from which they both derived it; either directly and independently, or indirectly,

through one of the two having first known it, and then communicated it to the other.

It has been already seen at page 143, that in Sze-ma-ts'ien's list of the 12 chi, which go to form the 60 year cycle, the first name *Shih-te* means the planet Jupiter, and refers to its motion through the heavens, and probably the other eleven names in Sze-ma-ts'ien's list, may also denote and signify other peculiar motions of the same planet; and have the same meanings as the more recent Chinese names of the 12 chi. This has yet to be seen, as the ordinary names of the 12 Chinese chi, are evidently used in a similar way, as the Hindoos words in Sze-ma-ts'ien's list, are used; and thus, they are probably connected with the 12 year cycle of Jupiter.

Lenormant, in his "Chaldean magic," page 81, says that the cabalistic name, Zedekiel, means Jupiter. The striking analogy, between Shih-te-ki., and Ze-de-ki, would almost point to a cabalistic origin of Sze-ma-ts'ien's list of names.

Chalmers, page 96, op: cit: states:—The twelve terrestrial "branches as they are called, were first "invented in all probability, to distinguish the twelve "spaces into which the horizon is divided." And page 95, "This division of the zodiac was probably intro- "duced into China, at the end of the Chow, or the "beginning of the Han dynasty," and he refers to a passage in the "Tso Chuan," to show that two of these signs are mentioned for an astrological "purpose *in connexion with the planet Jupiter.*"

And at page 93, "The use of the planet Jupiter "for astrological purposes, belongs to the early Han. "At that time, the period of Jupiter was supposed to "be exactly 12 years, so that he gave a year to each "sign of the zodiac; therefore he is called the "year star."

Souciet, II. 84, says that Y-hang particularly examined the movements of Jupiter, and lays down as a principle, that this planet does not take 12 years, for its revolution in the zodiac. Thus it is clear, that in the Sung-dynasty, the 12 year cycle of Jupiter was known to the Chinese.

In Vol. III, page 30, Souciet writes:—"During the "time of the Hia dynasty, the year was called Souy; "The character, Souy, means the planet Jupiter. "It was believed at that time that the revolution "of one year, is called 𠂤Souy. This interpretation "is of the time of the Tsin." No doubt the appropriation of the tradition about Jupiter to the Hia dynasty was modern, like other events assigned by Chinese, to that supposed period of their history. "The author of the Kwei Yu, whoever he is, but who lived about "Confucius's time, supposed that Jupiter made the "twelfth part of his course through the equator, or the "zodiac, in one solar year."

The statement of Dr. Chalmers, and of Pere Souciet, go a long way to prove, that the Chinese had the Jupiter cycle of 12 years, as the basis of their 60 year cycle, just as the Hindoos had it. But the statement of

Souciet is no proof as to what period the 12 year cycle of Jupiter was first known to the Chinese. It would rather seem from the work of Sze-ma-ts'ien, that it first appeared in China, in the time of the Han dynasty; but it may be a question, whether that part of Sze-ma-ts'ien's work which refers to it, is not the production of a more recent author, grafted on to the original book.

Some light may be thrown on this point, by determining at what date the Chinese had a cycle of 12 years, unconnected with the cycle of Jupiter of the same period.

De Mailla, Histoire de la Chine, Vol. VI, page 317, in a note, says:—"The Chinese have a cycle of twelve "years, which they apply also to the hours; it is by "this cycle that they determine the year of their birth."

It will be remembered that the Thibetans, in calculating their own ages from the year of their birth, count by the 12 years cycle of Jupiter; and it is therefore evident that Pere De Mailla here refers to the same cycle. He adds, "These years and these hours have the names of twelve animals—which further identifies the Mongol cycle of animals with the short cycle of Jupiter."

It may by observed, however, that De Mailla does not state in the passage just quoted, whether the computation of 12 hours preceded the cycle of 12 years, or otherwise.

In the "Memoires &c.," XIII, page 181, it is stated:—"The Tien-hwang made a cycle of ten, and another of "twelve." But it is not mentioned whether these were

of ten and twelve years, or of ten and twelve hours, or days. In continuation however of the above, the author of the "Memoires" states:—"Before the Tien-"hwang, the name of the year was unknown:—It is "they who determined the number of days which ought "to make it up." And at page 182, "The Ti-hwang "called by the words month, or lunation, the interval "of 30 days."

If this is all that can be said by Chinese, about the origin of the cycles of 10 and 12, it can only amount to a vague tradition of the existence of these periods, in in ancient times; but it gives no fixed date for their introduction into China, and we are left to conjecture as to their origin.

The formation of a cycle of 60, by a combination of two separate cycles, of 10 and 12 each, must be very ancient; and possibly, if not probably, the Chinese mode of combining the cycles of 10 and 12 together, although it may not be the first method used of joining them together, with a view of making a chronological period from them, it may be at least, a survival of some ancestral worship theory, which was adopted anciently for the purpose, and which has been long lost.

It has not been without some reason, that the Chinese have designated the cycle of ten, as a cycle of *stems;* and the cycle of twelve, as a cycle of branches. The reason of these peculiar designations seems to have been forgotten by the Chinese, or at least they give no satisfactory explanation of their being so-called. There

are other countries besides China, in which a similar, if not the same chronological arrangement, seems to have been used, and where the remembrance of which, still lingers. Albiruni, op: cit: page 2, writing of the chronology of central Asia, states:—"A learned man "once asked me, regarding the eras of different nations, "and regarding the difference of *their roots* (stems?) "*i.e.*, the epochs where they begin, and of *their* "*branches*, *i.e.*, the months and years on which they "are based."

The roots, or stems, were thus, the epochs where an era begins; and it may be suggested whether the ten Chinese Kans, or stems, (or roots) do not signify ten epochs, which were at the beginning of an era; the exact date of which is unrecorded. Are they the names, in Chinese, of the ten periods, of the lives of their, and of our ancestors, the ten patriarchs from Adam to Noah? and of which there still exists a vague tradition, in the ten Ki of the primitive history of China? Besides this suggestion, which the analogy affords, there is also another, as to how or why, these ten epochs of roots or stems, were developed into continuity, by being made to appear in union with twelve branches, by means of which, their duration was to be perpetuated. Perhaps, when the mystery of Chinese history has been penetrated, it may be discovered, that a very ancient historical theory has been unconsciously preserved in China, and which future investigations may unravel.

Francois Lenormant, in the "contemporary review," April, 1880, page 582, "Biblical genealogies," gives such interesting remarks on this subject, that they are here subjoined to illustrate it :—

"It appears, that in the book in which "Berosus "exhibited the Chaldean traditions, the first ten genera- "tions after the deluge constituted a cycle, an epoch, "doubtless still entirely mythical, forming a parallel to "the ten antidiluvian reigns:"—(Beros. op. Joseph.: lib: 1, 7, 2) and at page 583:—"the total duration "of the ten antidiluvian reigns, had been 120 sari, or "periods of 3,600 years, that is to say, 432,000 years. "The tenth of this peroid is 43,200 years, or 12 sari; "which for the Chaldeans, constituted a celestial "revolution, and as it were, a true cosmical day; for "each of its *sari* contained 60 sossi of 60 years, just "as the day was divided into 12 hours of 60 minutes "containing 60 seconds. By admitting only 12 hours "in the *nychthemeron*, instead of 24, as with us, the "Chaldæo Babylonians traced the diurnal revolution of "the sun, on the plan of that of his annual revolution, "and of the zodiac. Consequently, each one of the "*sari*, of the period of 43,200 years, corresponded to a "sign, and to a month of the year; and also to an hour "of the day. But this period was again multiplied "by 12; and thus a more extended sidereal revolution "was obtained of 144 sari, or 518,400, years.

"Movers, has long ago recognised that the fact of the "*equivalence* of the duration of the ten antidiluvian

" reigns, to 10 periods of 12 sari ; *established between*
" *each of them, and one of those periods,* months, or hours
" of the greatest celestial revolution ; that thus *the ten*
" *antidiluvian patriarchs* of Chaldea *had been made*
" *to correspond to twelve solar mansions of the zodiac,*
" (Mazzaloth,) which the unfaithful Hebrews, during
" the period of Assyrian ascendancy, worshipped, to-
" gether with the sun and moon, and all the host of
" heaven, and which the Chaldeans thus early design-
" ated by those figures, the use of which has come down
" to us, through the medium of the Greeks."

" In fact, by this means, we are now able to under-
" stand, some of the *essential features of the cyclical system,*
" which had assimilated the 12 months of the year, to
" the 12 parts (of 43,200 years each) of the great period
" of 518,400 years, and *transformed the ten antidiluvian*
" *kings, into representatives of* 10 *of the solar mansions.*
" The creation of man, and of the first antidiluvian
" reign, must have been made to correspond to the second
" month of the year, *and the sign of the Bull.*"

The Chaldeans thus placed the 10 antidiluvian patriarchs in 10 of the 12 solar mansions. It will doubtless be remembered, that the legendary history of China, makes the appearance of the Tien-hwang, correspond to the time, and the sign, of the Rat: the Ti-hwang, to that of the Ox, and the Jin-hwang, to that of the Tiger, This exhibits a curious parallel to the assertion of Lenormant, placing the first antidiluvian reign in the time of the Bull; which just corresponds to the Chinese

placing the Ti-hwang, or sovereigns of earth, in the sign of the Ox.

The subject is one that demands a comparative investigation, beyond the limits of this small work.

It may also be mentioned that Patell, op: cit: 5 says, "The Turkish era (from the time of Timur) "*commenced with the creation of the world*, and is com- "puted in cycles of 12 solar "years each."

The cycle of 12 years was used in Babylonia in very ancient times. Sayce in op: cit: page 53 mentions. "The Accadians, had in anticipation as it were of Dr. "Hunter, expected the same weather after a cycle of "12 years."

The Chinese might therefore indirectly have got the 12 years cycle from the Babylonians, but if they did not learn it from that source, the earliest possible introduction into China of such a period, could only have been the result of their own simple observations, which showed them, that there were twelve lunar revolutions from one season of the year, to its apparent reoccurrence in the next year; and consequently that this number of periods might be used to divide the year into 12 parts, and by enlarging the computation, they might have made a cycle division of 12 years.

From that division of the year, the calculation would possibly descend to a division of the day into 12 parts, so as to make its composition analogous to that of the year, but it has been already seen, that this division of the day into 12 hours was not adopted in

China till the time of the Han dynasty, and thus the 12 horal cycle, could not have been the basis of the Chinese 60 year cycle, unless this were still more recent.

The double hour, or *cas-bu* as the Accadians called it, and answering to 2 of our hours, had long been in use in Babylonia. (Sayce op: cit: 54.) The Chinese might therefore have got the division of the day into 12 hours, from the Babylonians, and have used it as well as the other division into 100 Ki, although it was only handed on by tradition, without appearing in any book.

The division of the day into 12 hours, is also mentioned in the Zend Avesta, and the Persian Iranians might have communicated this to the Chinese.

It would even appear as possible, that in China the division of the year into 12 months, was posterior to the division of the day into 12 hours. Souciet III. 15 mentions :—"It is not less certain that the moons, or "lunar months have been constantly designated by the "signs, of which the characters are those of the twelve "hours. For example, the eleventh moon may be "called Tcheou, because the sun during the eleventh "moon always enters the sign Tcheou," and in a note "to this passage he adds :—The 12 characters of the "12 hours, thus express the order of the moons, Yu the "first moon, Mao the second, Chin the third, &c., &c."

This inverse order of periods, however, may be less real than the above passages would insinuate; for the names of the hours that are said to be used to designate he months, may there have been, only one set of the

names of the months. Souciet, at page 26, of same volume, has:—"The 12 moons of the Chinese year take "the names of the 12 signs. For instance the first "moon of spring is called the moon of *Pisces*. The "second is called the moon of *Aries*, in central and "Eastern Asia; the reason of this is, that according to "rule, the sun ought to enter the sign of Pisces, during "the course of the first moon."

This was also the ancient Babylonian usage. Sayce op: cit: 64 states "The months were all named in "Accadian after the signs of the zodiac, the first being "in Assyrian Nisan, our March." This adaptation of stellar names to the different months, is at the least singular. Patell, op: cit: 35, says:—"It is remarkable "that the Tze which are strictly portions of star time, "give their names to the lunar months."

There can be no doubt, that the division of the year into 12 parts, was a most ancient usage, in central and eastern Asia, and it is possible that the number of 12, might have been applied to make a cycle of years, without any connexion with the 12 year period of Jupiter; but this division of the year into 12 parts, and the similar duodecimal division of the day, are so far, unconnected with any systematic computation of time, by a period of 12 years; except recourse is had to the 12 years period, of Jupiter; so that to bring them all into contact and consequential relation, it would be necessary to show, that the cycle of 12 years was as ancient as the period of 12 months, by which the dura-

tion of the year was reckoned: and this can hardly be said of the 12 year cycle of Jupiter; which in China, was certainly of more modern origin, than the other duodenary cycles. This is specially the case as far as Chinese are concerned, for it seems clear that in the 3rd century B.C. they knew nothing scientifically certain, of the ancient methods of computing time. Souciet, III. 4, states:—"Chinese astronomers unanimously "agree, that at the year 206 B.C. when the founder of "the Han dynasty took possession of the empire, hardly "anything was known of the ancient methods, which "had been taught by the founders of the monarchy."

The division of the year into 12 months, may possibly have prepared the way for the division of the heavens into the 12 signs of the zodiac, and thus, facilitated the attention to the cycle of Jupiter through them; but it is supposed that the Chinese anciently divided the heavens, into 28 parts or sieu; and as some writers urge that the 12 signs of the zodiac were deduced from them, (See *Schlegel* op; cit:) there is no ground for saying that they derived the 12 signs of the zodiac from the twelve fold division of the year, nor thus measured the passage of Jupiter through them.

Dr. Chalmers, op: cit: page 95 says,—"That the introduction of the 12 zodiacal signs, dates from the end of the Chow, or the beginning of the Han dynasty." So it must have been learnt from western nations: and in a note to this he states:—"We do not find that the ancient "Chinese made much practical use of the 12 signs."

Souciet, op: cit: II. 122, states:—"During the Tang dynasty, a famous bonze of Fo, named Pou-kong, taught the Chinese, the names of the twelve signs of zodiac; Aries, Taurus, Gemini, &c."

The use of the cycle of 12 years in China, is attributed to the time of Tchuen-ho, or even to that of Fu-hi, but there does not seem to be any historical evidence, that this is the case; nor does there seem any reason, drawn from analogy with other Chinese similar computations of time, already mentioned, that they were users or inventors of such cycle, in the time ascribed to those ancient personages.

It is even a question, whether the Chinese ever used a cycle of ten years; so that there is no certainty that the cycle of 60 years, could have been originally a composite, of two such minor cycles of years, as has been supposed.

It is however evident, that their 60 cycle was arranged by adapting a combination of the two cycles of 10 and 12, of either days, or months; and it is quite in accordance, with their way of rendering as Chinese as possible, all the knowledge that they received from others; that when the Hindoo cycle of 60 years, was made known to them, they should have arranged it in the same way, as the other periods of 60 intervals of time had been previously formed by them; instead of literally copying the Hindoo formation and denominations of the 60 years of Jupiter's cycle; though by departing from the Hindoo way of marking the 60 years cycle, they have not succeeded in obliterating all

traces of whence they derived it, for they have left proofs in Sze-ma-ts'ien list of cyclical years, that it was really the cycle of Jupiter, which they had appropriated and transformed.

J. B. Biot, Etudes Sur l'astronomie Indienne et Chinoise, Paris 1852, page x, makes the following remarks on this system of *appropriation*;—"On examining what the applications of astronomical rules and calculations, in use amongst the several nations of antiquity, can offer either of the sign of originality, or of having been borrowed from other peoples; if it is discovered that the use of foreign methods, have been *intentionally disguised*, and appropriated to local customs and superstitions; it becomes testimony to there having been between them, a communication of ideas that has not been owned."

It is interesting to observe, in connexion with this question, that amongst the Chinese there was also a lunar cycle of 60 months. Patell, op : cit : page 36, states:—

"The moons of the civil year are also distinguished by their place in the cycle of sixty, and, as the intercalary moons are not reckoned, because during one of those lunations the sun enters no new sign, there are only twelve regular moons in a year; so that *the cycle is renewed every five years*. Thus the 1st, moon of 1862, being the first of a new cycle, the first moon of every sixth year, reckoned backwards or forwards from that date, will also begin a new *lunar cycle of* 60 *moons*."

In what year this lunar cycle of 60 moons, was introduced into China, there is no evidence; but it is worthy of attention, as besides being a cycle of 5 years, it shows a combination of five times twelve moons to produce a period of 60; similar to the combination of these numbers, which it has been already seen, was the foundation of the 60 years cycle of Jupiter; for this was formed by making five times the twelve years of the sidereal revolution of Jupiter, into the larger and special cycle of that planet. As this 60 lunar cycle was not formed by combination of 10 and 12, like the other Chinese cycles of 60 were arranged; so the names of each moon of the lunar cycle were not composed and adapted after the same plan. It has been seen above how Patell points out that the names of the lunar months are the names of the 12 Tze, and are thus of solar origin. Souciet, op: cit: page 135, confirms this:—"The 12 chi are used for "marking the moons of the year. The intercalary "moon has no character assigned to it, in this cycle." The lunar cycle therefore, seems to have sprung from the solar cycle, but beyond its being a repetition of other sexagesimal cycles, it has no essentially scientific relations with them.

The Chinese have also another sexagesimal cycle of days, which are distributed in the calendar into cycles of 60 of them, and each day of the cycle has a particular name, according to Mayers, C.R.M. page 348.

1. Kia,	6. Ki.
2. Yih,	7. Kêng.
3. Ping,	8. Sin.
4. Ting,	9. Jên.
5. Wu,	10. Kwei.

It is similar to the Egyptian year of two months, or sixty days, but it is a matter of uncertainty, at what time this cycle of 60 days was introduced into China. Dr. Chalmers discussing this question, op: cit: page 96, states:—"The application of the cycle to days, is "undoubtedly a very ancient practise. But it would "seem from a passage in the Shoo, Pt. II. Book IV, par. "8, that the days were originally arranged in *tens* "only, by means of the 10 celestial stems. Yu "is made to say 'I remained with my wife, only the "days Sin-jin-kwei-kea. These are the last three, "and the first, of the above mentioned set of characters "and the natural inference from their use here is, that, "*they were invented* to divide the month into three "equal parts; (three decades) and that in course of "time, they combined were to make the famous cycle "of 60. The first mention of the cyclical name of a "day is found in the Shoo, Pt. IV. Book IV. p. 1. "in the 12 month of the 1st, year of Tae-kĕă, or B.C. "1752; but the chronology is utterly valueless, and we "have no sufficient date to verify the day, moreover "this is *the only instance* of the use of the cycle which "occurs before B.C. 1121, of the same chronology. "In the books of Chow it is frequently employed."

The surmise of Dr. Chalmers is supported by the fact, that an analogous division of the month into three decades, was in ancient use among the Athenians, though there is no evidence to show how the resemblance occurred between the mensual division of the month by the Greeks, and the similar measurement of time of the Chinese. The Athenians and the Chinese had the same difficulties about the months of different lengths, and yet they managed to keep the decade calculation intact, and to divide each month in their own way.

The division of time into periods of ten days was very ancient, and its origin is not very clear. It seems to have been greatly used for astrological purposes. Guerin, op: cit: 181, 185, says it was used by the Chaldeans, and quotes Diodorus Siculus, who states:— "Every ten days a star is sent on earth, by the planets, "and a star leaves the earth, to inform them of what is "passing there. These observers of the actions of "men, who followed each other every ten days in the "Zodiac, and rose above the horizon or descended "every ten days, are the Drekhanos, or the Dekhans, "which means one who points out, or looks, at what is "passing." He then adds, that probably the *Decania* of Manilius, Lib. IV. 296, 300, comes from this Indian word.

Colebrooke, in his "Life and Essays," Vol. III, 325—327, in treating of this subject, states:—"The 10 Dresh-"kanos, or Decani, were figured with different attributes

" and dresses. This astrological notion was confessedly
" received from foreign nations. Firmicus ascribes it to
" Nekepso, king of Egypt. The names of the Decani
" are decidedly barbarous. It is not improbable, that
" some *affinity of sound* in the Egyptian or Chaldaic
" name may have suggested the formation of the
" corrupt word. The Sanskrit name apparently comes
" from the same source:—I do not suppose it to be
" originally Sanskrit, since in that language it bears
" no etymological meaning."

This last portion of Colebrooke's remarks is controverted by Guerin, loc: cit: who states that the Sanscrit work Dekhano, means, one who observes or looks at what is going on. This meaning of Dekhano is quite in accordance with the Chinese sound *Kan*, which is one syllable of the Sanskrit word, and which in Chinese signifies to look at, and is used to denote the 10 Kan, or decimal cycle which is now under examination:—Possibly the Chinese 10 Kan, the names of which are the same as those above mentioned, belonging to the days; may thus be identified wth the Hindoo Decani, and with the Chaldean similar 10 day period.

The chief point to notice in the matter is, that this decimal cycle, or ten *Kan*, was not originally one for years but of days, and though it was used to make up a sexagesimal cycle of days, it is most unlikely that it was the origin of the sexagesimal cycle of years, or that of months; for the 60 days cycle was formed by multiplying the periods of 10 days by six, and the 60 months

cycle was found by multiplying 12 by five, and that of 60 years by intertwining combinations of 12 and 10. The 60 day cycle could not therefore have been the origin of the 60 years cycle; and there is no evidence to show that the Athenians, who used the 10 day cycle, ever extended their decades of days beyond a series of three of them, or 30 days, similar to that division of time by the Egyptians, although the Greeks had the sexagesimal arithmetic of Ptolemy, and practically used it for dividing the equatorial degree into 60°, 60′, 60″.

The only Asiatic period that resembles the Chinese cycle of 60 days, is the Hindoo cycle of the *Ritu*. Patell, op: cit: 38, 39 writes:—"The Hindoo solar "year is divided into six seasons (Ritu) of two sidereal "months each, the succession of which is always the "same." and there is the probability that the Chinese cycle of 60 days came from the Hindoos just as that of 60 years did.

But assuming that the cycle of 60 days was derived from the 10 Kan, the question arises, as to whence the Chinese got the number of ten as a period of days, or indeed, of any intervals of time.

Patell, writing about the Japanese, op: cit: 37, states that they have an era composed of 10 and 12, and he remarks:—"The words in the cycle of 10, are the names "of the 5 elements, duplicated, by taking those names "in both the masculine and feminine terminations; "*je* and *to*."

Their elements are Wood, Fire, Earth, Metal, Water, and are thus arranged.

1. Kino-je 2. Kino-to	wood.	3. Fino-je 4. Fino-to	fire.
5. Tsutsno-je 6. Tsutsno-to	earth.	7. Kanno-je 8. Kanno-to	metal.
9. Midsno-je 10. Midsno-to	water.		

So that if the Japanese derived the cycles of 10 from the Chinese, as is surmised, it is probable that the Chinese originally also made their cycle of 10 by duplicating 5 objects. The Chinese do the same in another way, for they make,

Kia	and	Yih	correspond	to the element	Wood
Ping	„	Ting	„	„ „	Fire
Wu	„	Ke	„	„ „	Earth
Keng	„	Sing	„	„ „	Metal
Sen	„	Kwei	„	„ „	Water

thus giving *two* Kans to each of the 5 elements. (See Mayers, page 348.)

The Tartars make their cycle of 10, by duplicating the 5 colors; Green, Greenish, Red, Reddish, Yellow, Yellowish, White, Whitish, Black, Blackish. They also derive it by a duplication of the 5 planets. The five planets had each a color, and the names of the planets were thus given to the days.

The Tibetans also have a similar method of duplicating 5 names, in order to make their cycle of ten.

1. Me.	6. Chags.
2. Me.	7. Ch'hu.
3. Sa.	8. Ch'hu.
4. Sa.	9. Shing.
5. Chags.	10. Shing.

This duplication of objects, by supposing that they were of two sexes, was in use by the Etruscans, and as the connexion of that nation with ancient Asia seems now to be established, see Ellis "Asian Affinities "of the old Italians" the practice may possibly be traced to the same Asiatic origin whence the Tartars and Chinese derived it.

Dennis, gives an instance of this practise amongst the Etruscans at Vol. I. page 4, of "Cities and cemeteries of "Etruria." There were the 12 great gods, six of each "sex, called Dii Consentes, or Complici. They com- "posed the council of Tinia."

It was also in use amongst the Egyptians. Seneca quœst: nat: lib. III. c. XIV. says that they had a cycle of ten elements, distinguished in male and female.

The Romans also had a cycle of 10 hours, (see Hyginus fabula CLXXXIII.) where he gives a special series of 10 hours, and cites their names in Greek, which possibly may belong to the cycle of 10 days; and also one of 10 months which made up the year before the time of Numa.

When therefore it is asserted by the Chinese, that Hwang-ti invented the cycles of 10 and 12, it can only mean really, that these cycles are known to have des-

cended from very ancient times: for looking back into the remote history of Rome, one sees that Romulus, or some one who lived in Italy at the period assigned to him, divided the year into 10 months, or moons; and after this, Numa divided and enlarged the year into 12 months, so that both the divisions of the year by 10 and 12, existed in the west, long before there is historical evidence that they existed in China; and it may be reasonably asked whether the supposed invention by Hwang-ti of the cycle of 10, is not somehow connected with the decimal division of the year used by the primitive Romans; especially as it is uncertain what intervals of time the denary cycle of Hwang-ti was applied to, whether of days or of months or of years.

The same may be said of the cycle of 12, though that period is known to have anciently existed amongst the Chaldeans, and that Numa probably got it from them, as far as the division of the year was concerned.

The Chinese may possibly have also derived their knowledge of it from the Chaldeans, as far as the division of the lunar year was concerned; though this system of 12 moons of 30 days each, constituting a year, was amongst the primitive traditions of mankind from antediluvian times, concerning the length of the year; and consequently it preceded the Chaldeans, who however adopted it, and made their Sarus equal to 10 years of 360 days each, or 3600 days, while their year was 12 moons of 30 days each; so that the Chaldeans had a cycle of 10 years, long before the Chinese

have any claim to having used it. With regard to the question of the antiquity of the cycle, which is here discussed, it should be noted that the cyclical names of the 12 cycle, at present used, are not even as ancient as Sze-ma-ts'ien, but were introduced after his time, as far as chronology is concerned.

There is another circumstance connected with the Chinese cycles of 10 and 12, which may further assist in finding how they originated in China.

These cycles are called the 10 Kan and the 12 Chi; which have certain Chinese names, and it is from these, that the series and denomination of the cycle of 60 is said to be formed.

But the 12 chi have also other names, viz, the names of animals, and each one of the chi has one of these to distinguish it. They are the

1 Rat,	7 Horse,
2 Ox,	8 Goat,
3 Tiger,	9 Monkey,
4 Hare,	10 Cock,
5 Dragon,	11 Dog,
6 Serpent,	12 Pig.

Mayers, in the C.R.M. Pt. II, page 352, remarks on this subject, "The usage is admittedly of foreign "origin, and is traced to intercourse with the Tartar "nations. The first explicit mention of the practise "of denoting years by the names of animals, is found "in the history of the Tang dynasty A.D. 618, where "it is recorded that an envoy from the nation of

"the Kirghis, spoke of events occurring in the year "of the hare, or of the horse. According to "Chao-yih, traces of a knowledge of this method "of computation may be detected in literature, at "different intervals, as far back as the period of the "Han dynasty, or 2nd century of the Christian era. "The same writer is of opinion that the system was "introduced at that time, by the Tartar immigration." Abel Remusat, in his "Recherches sur les langues Tartares," page 300, 307, has the following, on the 12 animal names of the Chi:—"I wish to speak of the "cycles of twelve animals, imagined by the Kirghis, and "now in use through nearly all eastern Asia. The model "of it has incontestably been the duodenary cycle, "employed by the Chinese from the highest antiquity; "but the idea of substituting the names of domestic "animals, instead of the insignificant characters which "compose it, belongs to the Kiei-kia-sse."

"Besides the advantage of being more easily retained "in the mind, the cycle of animals has also that of "providing astrologers with new resources, by attaching "to each year, to each day of the *hexacontæride*, and "even to each hour of the day, a symbol derived from "the disposition, whether real or fictitious, attributed "to each of the twelve animals. As regards the selec- "tion of these latter, it is difficult to say what brought "it about. The ox, the hare, the horse, the sheep, the "fowl, the dog, and the pig, are animals useful to man, "and one can conceive that he wished to give the

" names of these to some of the periods of his existence;
" but, the rat, the leopard, and the serpent, are not in
" the same class; the monkey has apparently never been
" found in the forests of Siberia, nor the dragon in any
" part of the world. Even if the locality where the in-
" vention of this cycle is supposed to have originated, be
" changed, it would not be any easier to reconcile the
" elements of its composition with other countries. In
" India they would no doubt have chosen the remarkable
" animals which are special to it, such as the elephant,
" or the tiger; they would not have admitted the rat,
" which has nothing to recommend it, nor the dragon,
" which is the sole imaginary animal to be found in the
" list. Whatever it may be, it appears that the cycle
" of the Kirghis was primitively composed of Turkish
" names, but the Mongols, the Thibetans, the Japanese,
" the Persians, the Manchus, have each translated them
" into their own languages, and have only preserved
" the sequential order of the animals."

The opinions of Mr. Remusat on the origin of the animal cycle will have to be examined critically later on. The quotation from the work mentioned, is meanwhile given here, in order to place the reader in possession of his testimony on the subject, and for the completion of the discussion on the cycle of twelve.

Hager, in a dissertation in the "Mines de l'orient," says, that the Turks have this animal cycle, and use it in their calendar.

It will be perceived from the above passages, that the 12 animal cycle was applied to denominate the 12 hours of the day, as well as the twelve years of the cycle; and that it also was applied to the twelve moons of the year, appears from Fortia d'Urban, op: cit: Vol. II, page 6, who, quoting the history of China by De Mailla, about the reign of Yao, remarks:—"He chose the "moon Ping-yu, otherwise called the moon of the "Tiger, the third in the order of the cycle, to be the "first moon of the civil year."

The twelve animal cycle was also used to denote periods of several years. Pere Amiot, in a dissertation on the three Hwangs, inserted in the 4th chapter of Premare's, "discours preliminaire" to the Shoo-king, page 64, mentions:—"The Heaven commenced its "operations at the revolution of the Rat': the Earth "commenced its operations at that of the Ox; and the "Man was produced at the revolution of the Tiger." He afterwards explains that each of these periods was 10,800 years, and 12 of these go to a revolution. It may be as well here to recall to mind, that the Egyptians divided each sign of the zodiac into nine parts, which gives 108 divisions of it; and with the usual amplification of all numerical periods, the resemblance between these periods and those of China, is easily to be accounted for.

These quotations it should be observed, are not inserted here as evidence that the application of the animal cycle actually occurred at the time of Yao; or

at that of the three Hwangs; but merely to present the opinion of the authors cited, as evidence that such applications existed at one period or another; and to show that the 12 animal cycle, which is a counterpart of the 12 chi, was also used for other purposes besides computing a cycle of years.

The point sought to be brought to notice now, is, that the 12 animal cycle was not an isolated and special invention, but was preceded by, or was synchronous with, another cycle of 28, from which it was the outcome; and hence, unless the opinion of Remusat be admitted, that the 12 chi cycle was the model of the animal cycle, which is very uncertain, the connexion between these three cycles will be established, and light will be thrown on the origin of the cycle of 12.

Guerin, op : cit : page 74, says with reference to this, "The Hindoos derived their 12 Khyettros, who presided "over each month, from the 28 immoveable figures of "the lunar zodiac. The cycle of 28 from which the cycle "of 12 animals was derived, is the cycle of the 28 sieu."

Souciet, II, 136, speaking of this cycle says of the cycle of 28, "This is the 28 characters of the 28 Chinese "constellations; it is used for a cycle of 28 years. I "know not whether its use is very ancient in China."

Mayers, C. R. M. page 358, says, that "mention first "occurs of these 28 sieu, in the Chow-li, where the term "(wei, position) is employed as their designation, "and that they are also mentioned in the Li-ki, "and the Sse-ki by Sze-ma-tsien, and the expres-

" sions used in their designation are interpreted as " signifying *the resting places* or *mansions* of the sun " and moon in their revolutions."

According to Gaubil, op: cit: page XII, the most ancient catalogue of them is given in a work by Liu-pu-wei.

The list of the constellations according to the Chinese names and meanings, is as follows: see Medhurst, Shooking, Appendix A. page 399.

1. Këo .. .. The Horn.
2. Kang .. .. „ Neck.
3. Te .. .. „ Bottom.
4. Tang .. .. „ Room.
5. Sin .. .. „ Heart.
6. Wei .. .. „ Tail.
7. Ke .. .. „ Sieve.
8. Tow .. .. „Measure.
9. New .. .. „ Ox.
10. Neu .. .. „ Girl.
11. Heu .. .. Emptiness.
12. Wei .. .. Danger.
13. Shih .. .. The House.
14. Peih .. .. The Wall.
15. Kwei .. .. Astride.
16. Low .. .. A mound.
17. Wei .. .. .. The stomach.
18. Maou .. .. .. The Pleiades.
19. Peih .. .. The end.
20. Tsan .. .. To mix.
21. Tsze .. .. .. To bristle up.

22. Tsing .. .. The well.
23. Kwei .. .. The imp.
24. Lew .. .. The willow.
25. Sing .. .. The star.
26. Chang.. .. .. To draw a bow.
27. Yih .. .. A wing.
28. Chin .. The cross bar of a carriage.

The 28 sieu of the Chinese are also denominated by 28 names of animals, which include the 12 animals of which the animal cycle is composed. These 28 animals are placed in slightly different series of order by different writers on the subject as may be seen by the subjoined lists.

The Abbè Perny, in his "dictionary," Vol. II. appendix, page 107, places the 28 sieu in the following order, and annexes the list of planets supposed to be connected with them.

1. Serpent .. .. .. Jupiter.
2. Dragon .. .. .. Venus.
3. Ho, a species of beaver .. Saturn.
4. Hare .. .. Sun.
5. Fox .. .. Moon.
6. Tiger .. .. Mars.
7. Leopard .. .. .. Mercury.
8. Unicorn .. .. .. Jupiter.
9. Ox .. .. Venus.
10. Bat .. .. Saturn.
11. Rat .. .. Sun.
12. Swallow .. .. .. Moon.
13. Pig .. .. Mars.

14.	The animal Yu	Mercury.
15.	Wolf	Jupiter.
16.	Dog	Venus.
17.	Wild Fowl	Saturn.
18.	Domestic Fowl	Sun.
19.	Crow	Moon.
20.	Monkey, large	Mars.
21.	Monkey, small	Mercury.
22.	The animal Han, species of Rabbit	Jupiter.
23.	Sheep	Venus.
24.	Stag	Saturn.
25.	Horse	Sun.
26.	Stag, small	Moon.
27.	Adder..	Mars.
28.	Lombric	Mercury.

It will thus be observed that of this above series

Jupiter	No. 1.	represents the	Serpent.
Venus	„ 2.	„	Dragon.
Sun	„ 4.	„	Hare.
Mars	„ 6.	„	Tiger.
Venus	„ 9.	„	Ox.
Sun	„ 11.	„	Rat.
Mars	„ 13.	„	Pig.
Venus	„ 16.	„	Dog.
Sun	„ 18.	„	Fowl.
Mars	„ 20.	„	Monkey.
Venus	„ 23.	„	Sheep.
Sun	„ 25.	„	Horse.

which are the 12 animals of the Chinese duodecimal series.

It moreover appears that there are only three planets, Jupiter, Venus, Mars, and the Sun, assigned to *this series* of twelve animals, and that of these the planet Jupiter is at the head of the list, similar to the position of She-te-ki, in Sze-ma-ts'ien's list of the 12 Chi, where that name stands for Jupiter. It is also to be noted, that the correspondence of Jupiter with the animal series in this list, only occurs once; and that Saturn, the Moon, and Mercury do not fall in with the 12 animals in the above list.

Gustave Schlegel, in his "Uranographie Chinoise," Vol. I, page 583, and 622, gives the list of the 28 sieu, and the corresponding animals, and planets, in the following different order. He says he transcribed this from Siufa's work on astronomy.

1. Le Boa	Jupiter.
2. Le Dragon	Venus.
3. Le Blaireau	Saturn.
4. Le Lievre	Sun.
5. Renard	Moon.
6. Tigre	Mars.
7. Leopard	Mercury.
8. Licorne	Jupiter.
9. Bœuf	Venus.
10. Chauve Souris	Saturn.
11. Rat	Sun.
12. Hirondelle	Moon.

13. Porc	Mars.
14. Pangolin	Mercury.
15. Loup	Jupiter.
16. Chien	Venus.
17. Faisan	Saturn.
18. Coq	Sun.
19. Corneille	Moon.
20. Singe-(grand)	Mars.
21. Singe-(petit)	Mercury.
22. Chien Sauvage	Jupiter.
23. Belier	Venus.
24. Cerf-(grand)	Saturn.
25. Cheval	Sun.
26. Cerf-(petit)	Moon.
27. Serpent	Mars.
28. Ver de terre..	Mercury.

It will be observed that according to this series, the corresponding order of the 12 cycle animals to the 28 creatures, is somewhat different from that which is shown in the series of the Abbé Perny

Venus	No. 2.	represent ..	Dragon.	1
Sun	„ 4.	„ ..	Hare.	2
Mars	„ 6.	„ ..	Tiger.	3
Venus	„ 9.	„ ..	Ox.	4
Sun	„ 11.	„ ..	Rat.	5
Mars	„ 13.	„ ..	Pig.	6
Venus	„ 16.	„ ..	Dog.	7
Sun	„ 18.	„ ..	Cock.	8
Mars	„ 20.	„	Monkey (grand).	9

Venus	,,	23.	,,	Ram. 10
Sun	,,	25.	,,	Horse. 11
Mars	,,	27.	,,	Serpent. 12

So that the Serpent is the last on this list instead of being the first, as it is in the list of Perny. Moreover the Dragon is the first in Schlegel's list. Dr. Schlegel, page 563, cites Siu-fa, who states the dictionary Show-wen says also that the hour Sse is the symbol of the serpent; which corroborates Perny's order of the series, as Sse is the first of the Chi which correspond to the 12 animals, and it would even show that the rat, though now placd first, was not anciently at the head of the list. Moreover, the dragon is the first, in Schlegel's list, whereas it is the second in Perny's series.

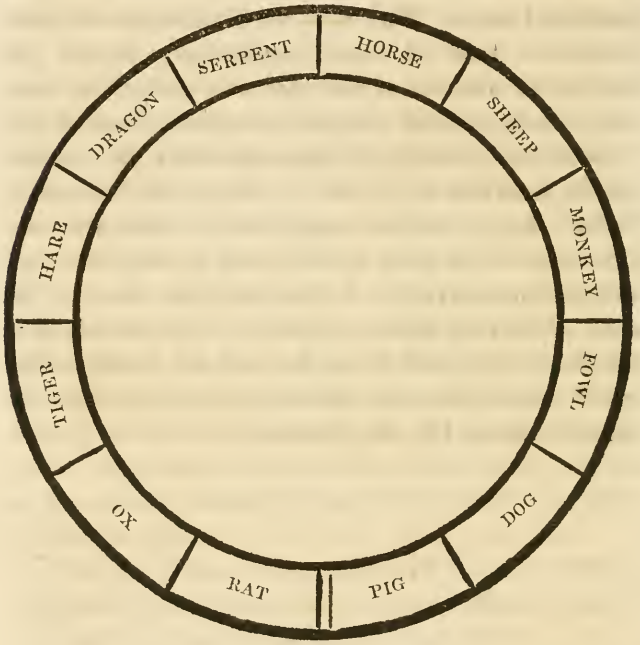
The planets are also assigned differently in Schlegel's list, and none of the 12 animals correspond there with Jupiter, nor with Saturn, nor with the moon nor with Mercury; so that only two of the planets are assigned to the series in Schlegel's list, whereas there are three in that of Perny.

Both the above ordinal series of the 12 animals, differ however from the ordinary placement of them as is given by Mayers, C.R.M. Pt. II. No. 302.

1. Rat.	7. Horse.
2. Ox.	8. Goat.
3. Tiger.	9. Monkey.
4. Hare.	10. Cock.
5. Dragon.	11. Dog.
6. Serpent.	12. Pig.

In this the rat stands first, whereas the rat is the 5th in Schlegel's and the 6th in Perny's list, and the sequence of the other animals proceeds in inverse order in Mayer's series, to those of the other mentioned series. With however the exception of these differences, they all agree substantially in the fact that the 12 animals of the duodenary cycle, have been methodically selected from the 28 animal names of the Chinese sieu; for they follow each other by regular similar intervals of 2 and 3, except the first two in Perny's list, in which couple it is, that the sole appearance of Jupiter occurs; and if they were all written consecutively in a circle, as they occur in the order which they follow in the 28 series, starting from the Rat as the initial point, they will be found to thus occupy exactly the same position as they do in the cycle usually employed by the Chinese.

Schlegel, at page 568, op: cit: gives a drawing of the circle with the 12 animals ranged round it, which he extracted from the *Tien Youen-li-li*, and which is here reproduced.



The Chinese have an outer circle to this drawing in which the 28 sieu are placed round the 12 animals so as to correspond with them.

The origin therefore of the duodenary cycle of animals may be traced to a systematic connexion with the 28 sieu, and its Chinese historical origin can only

thus be synchronical with the appearance in China of the 28 sieu. It will be seen further on, that several of the 12 animals also occur among the animal symbols of the 28 Indian Nakhsattras.

There is also another point which is worth considering, viz, that the 12 animal cycle is positively identified with the 12 chi cycle, so that not only that cycle, but even the cycle of 60, which is derived from it, will be both found to have a contemporary origin in the introduction of the 28 sieu.

Mayers, page 357, places the two series of names together, and shows that each of the 12 chi appertain to one of the 12 animals, so that practically they are the same. Schlegel, op: cit: page 559, quotes from a Chinese author "Materials for the astronomy of the country of Buddha." "The Emperor Hwang-ti, B.C. 2697, established the 12 signs Tcheou, Tsze, &c., to designate the twelve months and he made them correspond to the 12 names of animals." The animal cycle, therefore, according to the Chinese themselves, is identical with the cycle of 12 chi, or the 12 months of the year.

The modern cyclical names of the 12 chi as distinguished from the animal names are,

1. Tse.	7. Ou.
2. Tcheou.	8. Ouei.
3. In.	9. Chin.
4. Mao.	10. Yeou.
5. Chin.	11. Su.
6. Se.	12. Hai.

and though it is to be observed, that they do not appear to be derived from the astronomical names of the 28 sieu, it is not proved whether those cyclical names were known to the Chinese, more anciently than the animal names of the sieu—or even that they were more anciently known than the names of the 10 kan, which also have no ascertained connexion with the 28 sieu: but whether this be so or not, it has already been seen that the names of the cycle of the 12 chi as a cycle of 12 years, is not proved to be of ancient usage in China.

There is also a further remarkable coincidence, between the Hindoo Nakshattras and the Chinese sieu; and the animals which are symbols of the latter, from which the 12 animal cycle is derived. It is, that the greater part of the Hindoo Nakshattras have also animal symbols, and amongst them are to be found several which correspond to those in the Chinese series of 28, and in that of 12. Guerin, op: cit: page 42-43. gives a list of these Hindoo symbols. No. 1, has a horse's head, or a man with a horse's head. He calls this Nakshattra *oshini*, and gives its derivation from *osho*, a horse, in Zend *asp*.

2.	Bharani	Has a fowl.
4.	Rohini	A serpent.
6.	Ardra	A tortoise or frog.
5.	Mrgacirsha	A stag's head.
9.	Aclesha	Head of a dragon.
10.	Magha	Monkey.

14. Citra	Leopard.
15. Svati	Serpent.
16. Nicakha	Ox's head.
18. Jyestha	Young deer.
19. Mula	Tiger.
20. P. Ashadha	.. Lion.
21. U. Ashadha	Lioness.
24. Cravishtha	.. Dog.

Guerin, page 51, further states:—"Sometimes these "constellations are painted under the form of men, "with the head of a bird, of a serpent, of an ox, of a "dog; and at another time under the form of animals "of all sorts."

Paravey, op: cit: page 31, points out that:—Similar symbols of men with other animal heads are formally traced in the zodiacs of Esneh and of Denderah. He also says, similar figures of human bodies with animal heads are to be found in a Chinese cyclopedia, quoted by Remusat.

It will be seen from the above, that 10 of the animals mentioned in the Chinese 12 animal cycle, and 13 of those mentioned in the 28 animals of the Chinese sieu, are all to be found in the animal symbols of the 28 Indian Nakshattras; and as the 12 animal Chinese signs are derived from the 28 sieu, and as these latter are identified with the Nakshattras; it is evident that the Chinese 12 animal signs, are also derived from the 28 animal and other symbols of the Hindoo Nakshattras. This completely disposes of the assertion,

that they were invented by the Kirghis, which was most likely ventured on by Chinese, to deflect attention from their real origin; and that by tracing them to the Kirghis, who have no reliable history, the subject might be shrouded in the mystery of tradition, and thus acquire the garnish of antiquity.

Dr. Schlegel, Uran: Chin: 559, treating of the cycle of 12 animals states:—"The origin of this zodiac is "absolutely unknown," and he adds, that Klaproth (Journal Asiatique, tom xv. page 312) mentions that the oldest known monument representing this animal zodiac is a mirror, described in the collection of antiquities, called Po-kou-thou, by Hoang-hio-fang, which mirror was made in the 5th year of Kao-tsu, the founder of the Tang dynasty, A.D. 622.

This was about the same time that the Hindoo astronomy and astrology was formally introduced into China.

Schlegel, further states, loc: cit:—"The Chinese "book, called the beginning of things," (written by Liou-hang) ascribes the invention of this animal cycle to Hwang-ti; but a Japanese author of the book called "Materials for the astronomy of the country of Buddha," states, that there is no proof of such origin; and that they are not more ancient than the Emperor Ming, of the Han dynasty, A.D. 58.

Dr. Schlegel, page 561, op: cit: urges however, in support of the antiquity of this animal cycle, that in the memoirs of Kouan-lou, mention is made of "the pro-

"gnostics of the dragon and the serpent," and their corresponding signs of Tchin, and Sse; and he concludes hastily from this, that the animal zodiac was known in the Han, and Tsin dynasty, or 3rd century of our era, and he also asserts that they were even known in the time of the Chow dynasty. He merely says:—"We have indirect historical proofs of the "existence and use of this cycle as far back as "the sixth century before our era. The book called "Researches of origins" says that the twelve animals "already exist since a long time, but no one knows "whence they came. There is no mention made of "them in the classics."

These surmises of Dr. Schlegel do not agree with his own statement, nor with the fact that neither the names nor the cycle of the 12 animals had any scientific or systematic existence in ancient times, outside the 28 stellar mansions, or sieu, which are represented by 28 animals.

Dr. Schlegel, page 562–563, avows:—"that many "Chinese *savants*, have tried to account for the origin "of this zodiac, but without success," and he cites an author of the Yuen dynasty (quoted by Siu-fa the author of the Tien-yuen-li-li) who says, that Choo-hi having asked the epoch whence they dated, and in what books their origin could be found, he received the answer, that they corresponded to the 28 planetary domiciles, or sieu, but that only the dragon, and the ox, were to be found there; and that as far as the others

are concerned, none of them corresponded. (This is not correct: see page 204.) Also that "The Researches of strange things" of Han wen, cap: Foung-mao-ti: of Mao-ying-tchouen, state that no one knows whence the 12 material objects came from, and then the Chinese author states:—"In my own opinion the passage of "the Shi-king, the day King-wou is thought lucky, and "good for choosing our horses, is a proof that at that "time, the sign *wou*, corresponded to that of the *horse*." The only analogy between them is, that both Wou and the horse are in the 7th place of either series. This quotation however from the Shi-king, is not conclusive on the point under examination; for the date of the composition of the ode is not certain; nor is it at all certain that this is the right interpretation of the allusion to the choice of horses.

On the other hand, Ideler, "Ueber die Zeitrechnung "der Chinesen," page 78; maintains that this cycle was invented in western Asia, and Schlegel urges on this, that the Chinese who anciently dwelled there, were consequently the inventors. This might be true of the ancestors of the Chinese; but the connecting link between them and these ancestors, is not apparent.

Whatever may be the original place of the invention of the 12 animal zodiac, it is only necessary to observe here, for elucidating the subject in hand, that the cycle of 12 animals is so closely connected, even by the admission of Chinese, with the 28 sieu, that this relationship is only to be accounted for by the pro-

bability that they are synchronically identical as regards the Chinese. The Hindoos derived the names of their cycle of 12 months from the 28 names of the cycle of 28, (see Burgess, op: cit: page 80,270), so that in India as well as in China, the two cycles of 12 are closely connected in their origin.

This is shown by Patell, op: cit: page 38; who says:—"In the most ancient astronomy of the Hindoos, "*before the adoption of the solar zodiac,* the beginning "of the year was placed at the entrance of the sun into "Aswini, the first of the Nakshattras, or the mansions "of the fixed lunar zodiac. About the year 1181 B.C. "the solar zodiac was adopted, founded on the lunar "zodiac . . *The names of the months were the same as* "*those of the lunar mansions,* in which the moon was "full, in the year that the solar zodiac was formed."

Proctor, "*Contemporary Review,*" June 1879, mentions the change from the lunar to the solar zodiac, was neccessitated by the inaccuracy of the former, and the only continuity preserved was in the names of the 12 moons of the year, which were given to the 12 solar divisions of the year.

Were the old Hindoo months, those of animals; and was the zodiac as now formed, with its animals, taken from the ancient animal lunar series?

The records of Chinese astronomical science are so incomplete, that they afford no evidence as to whether the Chinese proceeded in a similar manner, in this point, to that employed by the Hindoos; and, it is pro-

bable that the transfer of the lunar names to those of the zodiacal divisions, had been invented long before the Chinese ever thought of such matters. It will therefore be necessary to enquire more closely into the origin of the system of the 28 asterisms, and the corresponding division of the ecliptic.

First, as regards whether the Chinese themselves originated the system 28 sieu, it will be as well to relate what writers on Chinese astronomy say on this point. Dr. Schlegel, op: cit: page 583, writing on the astrological zodiac of the 28 animals, states;—first, that it is to be found in the work of Siu-fa; and that Siu-fa attributes great antiquity to it, and even pretends that it is the origin of the 12 animal stars. Schlegel differs from Siu-fa, about the actual ancient epoch of its first date, and urges in support of his remark, 1st, no allusion is made to this in the classics: 2nd, that the number of 28 animals of which it is composed, *proves evidently* that it could have only been composed *after* the division of the principal asterisms of the ecliptic into 28 planetary domiciles, as things must have existed *before* they were named, and that this division only dates from the Chow dynasty, or eleven centuries before our era. It may here be remarked, that as both the asterisms used in dividing the ecliptic, and the animal names given to them, are imaginary, they might easily have been invented together.

Dr. Schlegel does not give any proof of what he states, that the appellation of the 28 divisions was *not* made

at the very time at which such divisions were made; nor does he adduce any proof of the 28 system dating so far back as the Chow dynasty.

Dr. Burgess in his translation and notes of the Surya Siddhanta, page 201, states that Mr. Biot maintains that at B.C. 2357, the Chinese had only 24 of the 28 sieu, or stars; and that the other 4, (the 8th, 14th, 21st, and 28th), were added in the time of Chow-kung, about 1100 B.C. which completed the system of 28. But Dr Burgess remarks:—"it is obviously impossible "to fix the date by internal evidence, within a century "or two; nor is the external evidence for this of a "more definite character;" and further on:—"This "history rests on the authority of Mr. Biot alone, who "has not himself laid before us in their original form, "the Chinese texts, which furnish the basis of his "conclusions."

Mr. Biot in "Etudes Sur l'astronomie Indienne et "Chinoise," Paris, 1862, page 247, and in the subsequent article, "Precis de l'histoire de l'astronomie Chinoise," replies to these criticisms of Dr. Burgess, but he does not produce the original Chinese texts to support his theory, and he only mentions the Chinese works on astronomy, such as the San-pen, San tong and Tcheoupey, the authenticity and authority of which is questionable; and he merely says of them that they were seen by Pere Gaubil, and made the partial basis of his history of Chinese astronomy; but Gaubil certainly does not confirm by any Chinese reliable authority

what Mr. Biot had stated. Biot, in his justification, presents the well known elaborately composed historical system of ancient Chinese astronomy, which is altogether a "petitio principii." He also quotes the Shi-king, the Shoo-king, and Chow-li, as though their testimony were irrefragable; but he gives no solid reply to Dr. Burgess' remarks on this question. The assertion therefore of Dr. Schlegel, about the antiquity of the 28 sieu, and that the division of the ecliptic into 28 mansions dates from before the Chow dynasty, is not borne out by the opinion of Mr. Biot; for according to him, the Chows are to be credited with having invented four of these stellar divisions. Moreover, the 24 astronomical objects which Mr. Biot states were known to the Chinese, before the Chow dynasty; are not proved to be the 24 Sieu, and they might have just as well represented the 24 Tsie-ki, or the 24 Tchong-ki. Besides this, the records of the Chow dynasty are not of certain accurate chronological authenticity, although they do make certain material mention of the 28 sieu. See Chow-li Kiv: XXVI. fol. 20—XVII, fol. 29. XXVI. fol, 13 16.

It should be remembered, that the 28 Chinese sieu, beside their being an astronomical or astrological system, correspond with a cycle of 28 years, as already stated. Pere Souciet, op: cit: II, page 126, states with reference to the special use of the 28 sieu as a cycle:— "Those who at the beginning of the Tang dynasty, "(A.D. 622) taught the Chinese the four points of the

"heavens, Lo-heou, Kitou, Ki, Po, were according to "Hing-yun-lou, from a western country called Yu-szei, "and this Chinese author says, that the capital of Yu-"sze was Kang-ku; which place Souciet opines is "between Kashgar and Samarcand, but 3°, or 4°, more "to the north, than either of them; and he mentions "that it was from this place, that the Chinese got the "grape vine, 100 years B.C." Souciet adds, that this place does not occur in the ancient Chinese geographies, but in that of the Ming dynasty, it is called the kingdom of the Yous, or the country of the Yues-begs.

It will have been noticed, that among the four points of the heavens, which the Chinese thus learned from the western teachers during the Tang dynasty, there is the Ki, which is described by Souciet op: cit: II. 122, as being a cycle of 28 years; and he adds "that it was "used for the intercalations," This word Ki, and the names of the other 3 points of the heavens, Souciet states are taken from the language of a western country; and the Chinese astronomer Hing-yuen-lou, asserts that it forms part of the rule or the law of the Polomen, and in a foot note to this page in Souciet's book, it is explained that, "Polomen means, Brahmins."

It thus appears that as far as the Chinese had anything to do with the origin of the cycle of 28 years, they derived the knowledge of it from the Hindoos, about A.D. 622; and that as it is identical with the 28 Chinese sieu, it follows that the 28 sieu in China, date from the same time; unless the statement of Souciet is held to

mean, that it refers merely to the characters, and animal names of the cycle of 28 years, that were then used for the first time, to designate the 28 Sieu: but as this is mere conjecture, it can have no weight against the plain sense of Souciet's statement.

Souciet, further states, that Li-tchun-fong, who was the mathematician of Tai tsong, the 2nd emperor of the Tang dynasty, A.D. 629; learnt the four points of the heavens already mentioned, including the Ki or cycle of 28 years, from western strangers, and they were mentioned in an astronomical book called Kieou tche, and that this work was translated A.D. 718, into Chinese by an imperial astronomer called Kutan, who was a stranger from a western Kingdom called Tien tchow, which Chinese say is India, but which Souciet suggests may be Syria.

This further corroborates the Hindoo origin amongst Chinese of the 28 year cycle, though at present there is no evidence beyond the testimony of the Chinese themselves, that the Hindoos used a cycle of 28 years, although like the Chinese, they had a system of 28 asterisms for dividing the heavens.

There might possibly have been a cycle of 28 years amongst the Bactrians, or Chaldeans, as it certainly is an ancient real period.

It may however be considered, as established, that the cycle of 28 years came to the knowledge of the Chinese through the Kieou-tche, and that the 28 animal names of the 28 asterisms, are identified with it.

Souciet further states, op: cit: page 126:—that one of the uses to which the 28 characters is placed, came "from the same source. A Chinese scholar assured "me that the custom of giving the name of one the "28 constellations to each day, was introduced into "China through the Kieou tche, (the title of the book "in which the 28 year cycle is mentioned). Souciet adds;—"I have not found this stated in any book, "and I don't know whether the scholar was right. "He did not know where he had learned it."

The statement of the scholar, doubtless, represented a current tradition on the subject, amongst the learned Chinese, at his time; and even supposing that it was only his own original view of the case, it would still appear, from the aversion which the Chinese literary men have to innovations, that this scholar did not think it contradictory of the received view on this point; and that there was no general certain belief amongst Chinese scholars at the time he spoke to Pere Souciet, that the system of the 28 names of the asterisms was earlier them the time of the Sung dynasty. It may be also remarked, that Souciet certainly had no proof that the scholar was wrong, or he would have stated that he was so.

Mayers, C.R.M. page 359, states:—"There can be little doubt that the practise of marking 'the days of "the sun' has crept into Chinese chronology from a "western quarter." Schlegel, op: cit: page 645 states regarding this:—

"Ki (or Khi as he writes it,) is an Indian name," and he calls it "*an invisible planet* which represents " our solar cycle of 28 Julian years;" and he cites a " Chinese author, who states :—"The Khi is produced " by the intercalary moon. In 28 years there are 10 " intercalary moons, and during this time the Khi has " made one revolution round the heavens."

This is the first mention found of the Chinese acknowledgement of the 28 years cycle.

Possibly this may have reference to the planet Saturn; for Schlegel page 628, 629 states :—

" This planet according to the Chinese, advances in " 28 days one degree, and in 28 months one sign (of the " zodiac) so that it achieves its revolution in the " heavens in 28 years"

There is, as Schlegel observes, an inexactitude in this observation of the Chinese, for Saturn performs this revolution in 28 years and 166 days, but it certainly shows, nevertheless, that the Chinese had a cycle of 28 years, which they wrongly applied to Saturn, and the above appear to be the only two instances, in which they have used it scientifically; though practically, by naming their days in four series of seven days each, with each day under the influence of a planet; they adopted the method of a using a week of seven days, without apparently knowing that by a cycle of 28 years this nomenclature of the days is regulated, and made to recur in similar order, at the end of such period.

The week of seven days, with each day under the influence of a planet, was used in Babylon, at least 1700 B.C. but it has to be noted, that this was *no chronological epoch*, and is merely one by which the 1st, 8th, 15th, 21st & 28th days of each month were regulated in this planetary order, without specially and similarly noticing the remaining days of the month, between the 28th day, and the 1st day of the next month; whereas the Chinese continue the series of days all the year round, without intermission; just as the European nations do.

There is no proof that the Chinese have done this scientifically, and it is not even certain that they used the year of 365 days and a quarter, which is the basis of the 28 year cycle, until recent times. Souciet, III, 6, says of the astronomy of the Han dynasty:—

"The year was divided into 365 days, and a quarter "of a day," which would lead one to conclude that this division of the year was only known in China at that time; though there are others, who maintain that the Chinese knew of this solar year much earlier, relying on the celebrated passage in the Shoo king, where the Emperor Yao said "an entire year consists of three "hundred and sixty and six days." Whatever may be the case regarding this point, it cannot prove that the Chinese had a contemporary scientifical knowledge of other calculations pertaining to a solar year, at the supposed date of Yao. Mr. John Reeves remarks in his appendix to Morrison's dictionary, Vol. I, part II. page 1063:—"To our surprise we find that the Chinese know

"little or nothing about astronomical science. The "Chinese have been described as having arts, but no "science; and the more we are enabled by a progressive "knowledge of their language, to examine their literary "works with our own eyes, the better shall we "appreciate the justness of this description of them."

This would explain why the Chinese had a material knowledge of the existence of the 28 years cycle, without having the science to understand its application to a practical purpose, such as other nations have done.

At any rate, a scientific acquaintance with the systems, of 28 years, or 28 asterisms, could not be very ancient in China, for Souciet, III, 2 states:—"The "astronomy put in order by the Emperor Kang-hi, and "published a few years previously, assures that at the "time of Tsin-chi hwang-ti, the Chinese had lost the "method taught by the ancients, for the calculation of "the seven planets." Of course the Emperor Kang-hi takes it for granted, that previous to Tsin-chi hwang-ti, the Chinese had once possessed the method referred to.

This passage of Souciet is however remarkable, because the system of the 28 asterisms is founded according to Schlegel, op: cit: and other upholders of the antiquity of the 28 asterisms amongst the Chinese; on the application of the 7 planets *to each of the four seasons of the year*; and if the calculations of these 7 planets were not known, then neither could the 28 asterisms system in connexion with them, in Schlegels hypothesis', have been known either. The adaptation therefore of the

7 planets to the 28 system, must be recent; and the connexion between them is not later than the 7th century after Christ.

Souciet, adds, "What the Emperor Kanghi says is "taken for certain by the authors who since the Han "(206–226 A.D.), have written on astronomy," and he concludes, that "at the time of Tsin Chi Hwang-ti there "were neither able astronomers, nor a known method "of it. All that remained were confused traditions, "catalogues of stars and constellations, and fragments "of hidden books:"—and at page 7, Souciet adds:— "The first entire course of astronomy was made 66 "B.C. by *Lieou-hin*, who had collected the observations "of *Lieou-hang*, his father, of Sze-ma-ts'ien, of Lo-kio- "hong, and others; and it was called San Tong, or "three principles." And at page 9:—"They had no "knowledge of the equations for the Sun, the Moon, "and the planets."

They however knew about the 28 constellations; for Souciet remarks here:—"Besides the place of the sun "in relation to the 24 Tsie-ki, or to the 28 constella- "tions; Liu-hin, and Lo-hia-hong referred it to the "twelve divisions of the equator called Tse," but at page 12, he says. "It is much to be desired, that "the history of the Han had explained in detail, how "all the knowledge which is there related, had been "acquired. There is no distinctive mention made, "of what had been known by tradition, or of what "had been obtained by means of the books, that had

" been found, or of what had been derived from re-
" flexions on the ancient and recent observations."

There is thus no evidence in the Han astronomical books above mentioned, as to the domestic origin or antiquity of the 28 asterism system, amongst the Chinese. Moreover, Souciet, op : cit : page 15, shows that these astronomers abounded in false and absurd remarks, and calculations ; and that they did not even understand what they wrote about the cycle of 19 years, and that they propounded the Chang yuen, in lieu of a scientific epoch of the movements of the heavenly bodies, and at page 18, he adds :—" that it is not at all " certain that the Chang yuen was known previous to " the burning of the books."

It may be observed, that there is no numerical relation between the cycle of 28 years and the Pou of 76 years, or the Ki of 1520 years (= 20 Pou.) or the Yuen of 4560 years (= 60 Pou or 76 cyles of 60 years each,) which the Chinese learned from the Hindoos ; so that a knowledge of these periods does not show that the 28 year period was scientifically known to the Chinese at that time.

Souciet, op : cit : 21, says :—"that Li-fang (A.D. 85), invented the cycle of 76 years, as a correction of the 19 years period. There is a curious similarity between the first syllable *Li* of the Chinese inventors name, and the middle syllable, *Li*, of Calippus, the Greek inventor of the well known 76 year period, and it strongly savours of an unacknowledged appropriation of western know-

ledge; and as Li-fang is said to have called this period Pou, there is a further curious similitude in the term, between that word and the last syllable of Calippus, which would naturally have been Sinicised without a final consonant. Souciet further states at page 20–23 that at the time the Sze-fen astronomy was composed by *Li-fang*, under the Emperor Tchang-ti; sometime before A.D. 85; the Chinese had no instruments for observing and representing the movements of the stars in their relation *to the ecliptic*, which would have been necessary to assign the proper positions to the 28 asterisms; and it was not till the year A.D. 99, that they had an instrument for that purpose, which was made by Kia-koung, who in his memorial to the Emperor Ho-ti, states, that there were only instruments in use that served to represent those movements *in their relation to the equator*.

Souciet at page 24 adds:—"In the year of Christ 103, "the zodiacal distances of the 28 constellations were "observed afresh, and is not certain that it is to that "time, that *the date of the ancient declinations of* "*the constellations*, marked in the table of Y-hang, of "the 1st, Tang dynasty, is to be referred."

It would appear however most probable, that as there are no antecedent records of observations of the 28 asterisms, except the mention of the 28 sieu in the San-tong, 66 B.C.; these observations of 103 A.D.; were really of that time, although mentioned as made afresh. Souciet at page 31, writing of the Han astronomers

states :—"The numbers of heaven, (1, 3, 5, 7, 9=25), " of earth, (2, 4, 6, 8, 10=30) and of the expansion of " the eight Kwa, gave the numbers of the eight great " Tsie-ki, of the 24 Tsie-ki, *of the* 28 *constellations*, " of the cycle of 19 years, and other things. As " they were not obliged to give any reasons for the " facts which they advanced, there is no sort of com- " bination which they did not make, by addition, sub- " straction, division, and multiplication. All this was " done, to discover certain epochs, relative to the cycle " of 60. Moreover, that the greater part of the Han " astronomers, believed that the calculation of the " movements of the stars, was not founded on im- " moveable rules."

There could not therefore have been at that time, any scientific system, amongst the Chinese, of the movement of the planets through the 28 *mansions*, which later astronomers assert gave rise to the system of the sieu.

It may be conceded with all this, that the Chinese probably had an incomplete traditional knowledge of 28 constellations, by which certain movements of the celestial bodies were marked, long before they became acquainted with them from the Hindoos. It is known that the 28 asterisms were part of the Hindoo astronomical system anciently, or at least of the astrological system; though besides the 28 asterisms or mansions, there was another system of 27 asterisms, connected with it. But it is difficult to understand, how the

28 asterisms could be made an element in any scientific astronomical system except as connected with the solar cycle of 28 years, or as denoting the 28 days usually supposed duration of the moon ; and the Chinese do not seem to have made one out of them.

The next mention made of the 28 constellations, is by the astronomer of the Tsin Emperor, 284 A.D. ; and Souciet, op : cit : page 45, writes of him ;—"Seeing that "according to the Chinese method of the former "astronomers, Lieu-hong and others of the Ouei, it "was almost impossible to fix with precision the place "of the sun in a Tsieki, with reference *to the constella-* "*tions;* he invented another method.

"Thus in the middle of some eclipses of the moon, "he took the place of the moon, with reference to one "of the 28 constellations; and then by calculation he "found the place of the sun, with reference to the "same constellation; then the sun's place in the "constellation at the winter solsticle, and so on," but this winter solstice, says Souciet, at page 47, was "only accurately fixed by Ho-ching-tien (A.D. 443), "who it is known, had some conferences with an "Indian Bonze, who was well versed in astronomy, "and from whom he might possibly have learned the "method of observing it;" and at page 121, op: cit: Souciet says: that "this Indian bonze, was Hoey yen, who came to China in 440 A.D. at the time of the first *Sung* dynasty, and he taught Ho-ching- "tien, many things about astronomy." Souciet con-

tinues at page 49:—"He further made an immense "sphere, with the earth in the middle, and *the* 28 "*constellations*, appearing in the sphere; and his mark- "ing the place of the sun at the winter solsttice, "in the constellation *Teou;* (one of the 28) shows "that they were well known to him, and that they "had some reference to he sun."

Even the bonze Y-hang, at the time of the Tang Emperor, Hieun-tsong, 721, A.D.; derived the 28 constellations and the 24 Tsie-ki from the mysterious number 50, or the Fa-yen, or 49; so that even at that recent date, *there was no scientific basis amongst Chinese,* for the 28 mansions, nor for the 28 year cycle connected with them. So far as regards the date at which the Chinese scientifically knew about the 28 sieu, or the cycle of 28 years, it would be difficult to assign the commencement of their systematic acquaintance with it, further back than about the first years of the Christian era.

It would rather appear from what has been stated, that the Chinese derived their principal knowledge of the 28 sieu, and consequently the same of the other cycles which depend on them, or are derived from them, through the Hindoos; but it is as well to state that the Hindoo and Chinese systems regarding these 28 mansions, are not altogether identical; and morover, that there is a probability that both the Hindoos and Chinese, derived their knowledge of the whole subject, from some other source in more ancient times.

The Hindoo primary system of the mansions only made them to consist of 27; whereas the Chinese from the time when they are known to have theorized on the mansions, have always had 28. This arrangement was purely astronomical. Burgess, in his translation of the Surya Siddhanta, page 91, has:—"The ecliptic is "divided into 27 lunar mansions, or asterisms, of equal "amount; hence the portion of the ecliptic occupied by "each asterism, as 13, 20 ' or 800.'

This division of the ecliptic in to 27 equal parts, is reasonable; as it gives an easily defined space for each asterism, whereas if the ecliptic is divided into 28 parts, each of them would occupy 12°, 51$\frac{3}{7}$,' or a most unscientific division.

Colebrooke, Essays, II. 362, 363 says, the use of the 28 Yogas is chiefly astrological, among the Hindoos; and has the same use among the Chinese; and that of the 28 Yogas, the Surya Siddhanta presents no trace.

Burgess, op: cit: 177. 179, writes "the text no "where expressly states, which one of the *twenty eight* "*asterisms which it recognises*, is, in its division of the "ecliptic into only 27 portions, left without a portion." So that in reality the Hindoo astronomy admitted both the 27 and 28 systems.

Mr. Biot in the "Journal des Savants" for 1840, endeavoured to prove the identity of the Hindoo and Chinese 28 division of the ecliptic; but there is this stumbling block in the road of such demonstration, that the Chinese division is equatorial, and that of the

Hindoo is zodiacal; and moreover, that the Chinese mansions consist of single stars only, while the Hindoo system is founded on constellations, or groups of several stars.

Burgess, op: cit: page 200, gives a table of correspondences between the Chinese, and Hindoo, and Arabian system of the 28 asterisms; and he shows that with the exception of the *first five* asterisms in the Hindoo list, they do not all three agree in the portions or divisions of the ecliptic assigned to the asterisms by the three systems.

Also, that in other 12 asterisms, the Hindoo and Chinese only agree as to their existence in the ecliptic; but not as to their occupying the same portions of it; so that only 17 asterisms of the 28, are to be found existing in each of them.

Besides this, he remarks, that with the exception of the above named *first five* asterisms, there are only 13 other asterisms out of the 28, that are to be found in the Arab and Chinese systems: making altogether only 18 out of the 28 asterisms, to be found in each of these two systems.

Burgess adds at page 201:—"After this exhibition of "the concordances" (he might also have said discrepancies) "existing among the three systems, Hindoo, "Chinese, and Arabian, it can, we apprehend, enter "into the mind of no one, to doubt that all have a com- "mon origin, and are but different forms of one and the "same system."

"The questions next arise, 1°, is either of the three "the original, from which the others have been derived? "2°, and if so, which of them is entitled to the honor of "being so regarded? 3°, and are the other two in- "dependent and direct derivations from it? 4°, or does "either of them come from the other? 5°, or must both "acknowledge an intermediate source?"

It has been already seen how Mr. Biot has unsuccessfully tried to prove that the Chinese were the primitive inventors of the 28 mansion system: or even that they knew of it in very ancient times. Burgess, loc: cit: observes:—"As regards the Hindoo origin of the system, "it has to be observed, that the literary remains of the "earliest period, viz., the Vedic period proper, present "no evidence of the existence of the system. In the "more recent portions of the Vedic texts, as in the 19th "book of the Atharva Veda, and in parts of the Yajur "Veda, full lists of the asterisms are found, but the "divinities under whose regencies the several regencies of "the several asterisms are placed, are *all from the Vedic "Pantheon*. The popular divinities of the later times "are not to be found among them. The Hindoo and "Arab systems have each their own points of agreement "with the Chinese sieu, which the other does not share. "Neither of them can have come *through the other*, from "a Chinese original. The Hindoo and Arab systems "being composed of constellations, and the Chinese of "single stars, neither of the two first named can have "come *independently* of the other from a Chinese original.

"The Chinese system cannot be traced to either of the "others *as its source*, since it agrees in several points "with each one of them, where that one differs from the "third. It becomes therefore necessary, to introduce an "additional term, and assume the existence *of a fourth* "*system*. To illustrate this hypothesis he adds:—"With-"in the limits of the central land of Iran, the table "land of Central Asia, we conceive the system of "mansions to have received that form, of which the "Hindoo, and Arab mansions, are the somewhat altered "representatives. (Dr. Burgess might have extended "his surmise to the Chinese also.) Precisely where, "and whether in the hands of Semitic or Aryan races, "we could not at present attempt, to say. If it had "formed a part of the Chaldaic astronomy we should "have heard of it from the Greeks."

With regard to this remark of Dr. Burgess, it may be of interest to present here, what Mr. R. A. Proctor says on this subject, in the June number of the *Contemporary Review* in, an article on the origin of the week:—"*A priori* considerations, derived from the "Babylonians, making the series of days of rest in "each moon terminate on the 28th day, suggest that "*they*, in the first instance, divided the zodiac into 28 "parts; but that later, recognizing the inaccuracy of "this arrangement, they abandoned it and adopted the "solar zodiacal signs."

Colebrook, Life and Essays, III, 282, "Essay on the Indian and Arabian divisions of the zodiac," in a note

states :—" Professor Weber held that Babylon was the " original birth place of astronomy, and that the Hin- " doos derived their 28 nakshattras from thence, as also " did the Chinese and Arabs respectively, their sieu and "manazils (Cf. Indischen Studien.) Burgess continues:— " The question of originality can only lie between " the Chinese and the fourth system, from which the " other two have together descended. It looks more as " if the series of the Chinese sieu, or single stars, were " the original, than as if the asterisms of the other sys- " tems had been independently selected from the groups " of stars, situated along the zodiac, with the intention " of forming a zodiacal system. The single determina- " tions of the sieu would have become the nuclei of " the constellations of the other systems." This might possibly be true in theory, but to sustain the hypothes is on which it depends, it would have to be proved that the Chinese had this single star system even as late as the asterism system is known to have existed in India. Of this there is no evidence that is reliable; and moreover, the constellations are certainly more striking to a star gazer, than the stars of the third magnitude, which figure amongst the Chinese sieu; and they present greater facility and extension for watching the movements of the planets through the heavens; and it should always be remembered, in examining this question, that the Chinese single stars *divided the equator*, and the Hindoo and other asterisms *divided the ecliptic*, which absolutely forbids the Chinese

system developing iteslf into those of India or Arabia. Besides, the division of the ecliptic into 28 portions is unscientific as far as can be at present known, or at least there is no reasonable explanation why such a curious division should be resorted to, while the 27 fold division is on the contrary so symmetrical, that it is hence to be preferred.

R. A. Proctor in C. R. June, 1879 states:— "*Per se* "there is no easily understood division of the heavenly "space into 28 portions; as in each of them there is "no striking star or constellation, equally distant from "its neighbours; nor does a 28 division naturally suggest "itself, by the appearance of the heavens and the stars." And yet Dr. Burgess states at page 206:—"To adopt a "series of conspicuous constellations along the zodiac, by "their proximity to which, the movements of the planets "can be marked, is no *unmotived proceeding*." So that had the Hindoo system anciently been scientific, it must have been so under an aspect which modern researches have yet failed to discover.

Dr. Burgess very pertinently remarks, page 180, on this subject:—"Whereas it might have seemed that "the system was founded on a division of the ecliptic into 28 equal portions, and the selection of a star or of a constellation to mark each portion, and to be as it were its ruler, it now appears that the series of 28 asterisms may be something *independent of, and anterior*, to any division of the ecliptic into equal parts; and that the one may have been only artificially brought into

connexion with the other; complete harmony between them being altogether impossible.

R. A. Proctor in C.R. June, 1879, gives the following explanation of how the series of 28 asterisms was anterior to the division of the ecliptic into equal parts, which Dr. Burgess, it seems, had correctly surmised.

"The moon measures off time in an obvious and "striking manner, and to ordinary observers with perfect "uniformity. Watching the moon's progress along her "zone, observers would perceive and have determined "the periods of these circuits, as between 27 and 28 "days. Watching the moon's motions among the stars "during one lunation, the observer, unless very careful, "would note nothing to suggest that she is travelling "round at the rate of more than a complete circuit in "28 days.

"Her path lies always in a certain zone, to which no "doubt a special name would be given. It was in reality "the mid zone of the present zodiac. The lunar zodiac "is the track of the sun round the heavens. The "recognition of the moon's zodiac would long precede "the determination of the sun's path among the stars.

"The Babylonians in the first instance divided the "zodiac into 28 parts, but recognising the inaccuracy of "this arrangment, the 28 lunar mansions of the olden "astronomy gave place entirely among the Chaldeans, "to the 12 signs of the zodiac; that is, the parts of the "zodiac traversed *day by day* by the moon, gave way to

" the part of the parts of the zodiac traversed *month* " *by month* by the sun."

The claim of Chinese, to have originated or even known in antiquity, the 27 mansions, cannot be substantiated, in view of all the previous considerations above mentioned; and all their chronology founded on this system, and its developement, is equally unreal.

It appears however, that the 28 mansion system, must have been the primitive division of the ecliptic, and the fact that the Chinese have used it, only shows that they derived their knowledge of it from the same source that the Hindoo, the Persians, the Copts, and the Arabs got it; but this is no proof that they inherited it directly from the first inventors of it, by regular national succession. Even at whatever time in their history they became acquainted with it, they did so only in an unscientific and incomplete way, and in a manner quite inadequate to build on it the chronological system which they have adopted, and for which they have endeavoured to procure the appearance of a dubious antiquity.

There is one circumstance, connected with the Chinese arrangement of the 28 constellations, that is specially interesting; and which is mentioned by Dr. Chalmers, in his above quoted essay on Chinese astronomy; and which he says the Chinese have left without explanation.

It is, that the order of the 28 constellation's proceeds from *west to east,* instead of arranging them from *east*

to west, by following the seasons of the year with which they are connected in the usual way, viz, spring, summer, autumn, winter: whereas the Chinese arrange them, spring, winter, autumn, summer; and Dr. Chalmers calls this a discrepancy, and does not attempt to explain it.

R. A. Proctor, loc : cit : says of the primitive observers of the heavens, that:—"they would find first, that the "moon circuits the stellar heavens from *west to east*, or "in the *direction contrary to that* of the apparent "diurnal motion, which she shares with all the celestial "bodies."

It is certainly a curious fact, that the Chinese do not know why they place the 28 constellations of the lunar zodiac in their natural order in the heavens, and this would go a long way to show, that even the Chinese have the same way of placing the constellations as the primitive observation by the Babylonians, mentioned by Mr. Proctor: but there can be no historical proof drawn of their having done so from this similarity, seeing that their knowledge of it is so incomplete and superficial.

It is remarkable however, that the Chinese should be in unconscious possession of a system for placing constellations from *west to east*, in such accordance with the natural method, pointed out by Proctor as the primitive natural one; while all other nations appear to have adopted the contrary. It is a strong proof of their unscientific appreciation of astronomy, and of their in-

capability of compiling an exact chronological system, from the measurement of the movements of the earth, and of the heavenly bodies, as other nations have been successfully able to do.

The next thing to be considered is the series of 12 animals, and their equivalents; which, as has been seen is so closely connected with the 28 sieu, and is even derived from them.

First of all it may be observed, that there is a coincidence between the practise of the Hindoos and the Chinese regarding this; for the Hindoos derived the names of the 12 months of their solar year, from the names of their 28 Nakshattras: and they selected them from these in a similar way to that, in which the Chinese have chosen their 12 animal months.

Burgess, op: cit: page 30, states:—"The names of "the solar months are derived from the names of the "asterisms, in which, at the time of their being first "designated, the moon was full during their continu- "ance. The same names are transferred to the lunar "months;" and at page 268, Cap: XIV, par: 15 of the "Surya Siddhanta:—"The months are to be known by "the names of the asterisms (Nakshattras) according to "the conjunction at the end of a lunar period:" par: "16:—To the months Karttika, &c., belong as concerns "the conjunction, the asterisms Karttika, &c., *two by* "*two*: but 3 months, namely the last, the next to the "last, and the fifth, have triple asterisms."

Before further comparing the Hindoo method for the assignment of Nakshattras to months, with what the Chinese do; it is important to notice, that Karttika or the first Hindoo month signifies Jupiter, just as the first Chinese chi, and the first Chinese month, has also Jupiter, for its symbol, or ruling planet; and it may be, that Sze-ma-ts'ien's name of the 1st of the chi, "Chiti-ko" is a corruption of Karttika, or is connected with it etymologically.

The comparison to be noticed is, that the assignment of so many of the Nakshattras to the Hindoo months, is the same as the relations are of the sieu to the 12 animal names, given by the Chinese. The ox, or the 5th animal in the series according to Perny, corresponds to the 5th month in the Hindoo series, as it has the three of the sieu, the 7th, 8th, and 9th, belonging to it, just as the fifth Hindoo month has three of the Nakshattras.

The sheep, which is the next to the last of the Chinese animal series, has three sieu assigned to it; the 21st, 22nd, and 23rd; and the horse or the last in Pernys series, has also three of the sieus belonging to it; the 25th, 26th, and 27th; just as was shown to be the case with the last, and the next to the last, of the Hindoo months.

In this comparison it will be noticed, that the distribution of the Nakshattras amongst the Hindoo months, and that of the sieu amongst the Chinese animal months, is based on there being only 27 symbols in each series instead of 28, and that in the Hindoo series

it is the 22nd Nakshattra, and in the Chinese series it is the 24th of the sieu, that are not made to enter into the calculation; so that there is a manifest parallel between them, with only this slight exception; which however goes to prove, that the Chinese must have been simultaneously acquainted with the 27 fold series as well as that of 28; and this would bring the Chinese acquaintance with them to quite a recent date; for Guerin, op: cit: page 31, says:—"It can be certainly "maintained that Shourdyo is the first who has "ingeniously reduced the 28 mansions to 27, or "A.D. 345."

It also proves that the naming the Hindoo months and the Chinese animal months, from the Nakshattras and sieu in this manner, must have been a recent event.

Such a similarity as the one just pointed out, cannot be in any way accounted for, by ascribing it to fortuitous circumstances. The methodical way in which the Chinese selection of the 12 animal months names from the names of the sieu has been made, is exactly similar to the Hindoo method of naming the months from their Nakshattras. There is therefore every reason for concluding, that the 12 animal cycle is certainly not of an earlier date in China than that of the date of the 28 sieu from which they were taken; and that as the Chinese avow their ignorance of the original introduction of the 12 animal cycle, they thereby admit that the date of their first first acquaintance with the 28 sieu, or 28 years cycle, is equally uncertain,

inasmuch as the essential connexion between the two has been established.

Another conclusion justified by the above, is, that both the series of 28 celestial objects, as the source, and the series of 12 ideals which were their consequences, simultaneously came to the scientific knowledge of the Chinese from the Hindoos.

Burgess, op: cit: page 269, writing of the Hindoo names of the months, states—"at what period these "*names* were first introduced into use is unknown. It "must have been of course posterior to the establish- "ment of the system of asterisms, but it was probably "not much later, as the names are found in some of "the earlier texts which contain those of the Nak- "shattras themselves. We can hardly suppose that "they were not originally applied independently to "the lunar months: and certainly no more suitable "derivation could be found for the name of a lunar "period, than from the asterism in which the moon "attained during its continuance, her full beauty and "perfection."

This would lead to the conclusion already pointed out by Proctor (see above, page 239), that the lunar months were first observed and named, before the solar months, or the division of the solar revolution into 12 equal parts were adopted by those who knew of the 28 asterisms; and thus the sieu being called lunar mansions is founded on fact; not that each sieu is a special lunar mansion, but the total space in the heavens occupied by

the 28 sieu, was divided into 12 unequal or even arbitrary portions of the sky, which were traversed by the moon in its revolution round the earth.

The following comparative table of the Hindoo Nakshattras and Chinese sieu, with their assignment to the 12 Hindoo months, and the 12 Chinese animal months, will make this more clear: though it may be observed, in elucidation of some discrepancies in the comparison with Davis, As: Res: III, 218, quoted by Burgess, op: cit: 270. "It seems indeed that the selection of the "three months, to which three asterisms instead of two "are assigned, must have been made some what "arbitrarily."

Hindoo Nakshattras, and the names of the Hindoo months derived from them, in the order as stated in the translation of the Surya Siddhanta, by Burgess, page 270.

NAKSHATTRAS	MONTHS.
Krttika	Karttika.
Rohini	
Mrgacirsha...	Margacirsha.
Ardra	
Punarvasu ...	Pausha.
Pushya	
Aclesha	Magha.
Magha	
P. Phalguni .	Phalguna.
U. Phalguni .	
Hasta	
Citra	Caitra.
Svati	
Vicakha	Vaicakha.
Anuradha ...	
Jyestha	Jyaistha.
Mula	
P. Ashadha...	Ashadha.
U. Ashadha...	
Cravana	Cravana.
Cravishtha...	
Catabishaj ...	Bhadrapada.
P.Bhadrapada	
U.Bhadrapada	
Revati.....	Acvina.
Acvini	
Bharani	

Chinese sieu, and the names of the 12 animal cycle derived from them in the order as stated by Perny. "Dictionaire de la l angue Chinoise Vol." II, page 106.

12 ANIMAL	CYCLE.
Serpent	Serpent.
Earth worm .	
Boa	Dragon.
Dragon	
Badger	Hare.
Hare	
Fox	Tiger.
Tiger	
Leopard	Ox.
Unicorn	
Ox	
Bat	Rat.
Rat	
Swallow	Pig.
Pig	
Wolf	Dog.
Dog.....	
Pheasant.....	Cock.
Cock	
Crow	Monkey.
Large monkey	
Small monkey	Sheep.
Wild Dog ...	
Sheep	
Large stag ...	Horse.
Horse	
Small stag ...	

It will be observed that in the foregoing lists there are only 27 Nakshattras and 27 sieu mentioned. The Hindoos omitted Abhijit, the 22nd of the Nakshattras in the order of 28, when they reduced the number by one, and the Chinese system is reckoned with only 27 sieu, or the 14th sieu is here omitted to make the parallel between it and the Hindoo system.

The chief point presented and insisted on here, to illustrate the comparison, is, that as the first Hindoo month Karttika represents Jupiter, and the 1st Chinese che and the first name of the 12 animal cycle represent the serpent and Jupiter also; the serpent is assigned the first place in the Chinese series, which has been assigned by the Hindoos to Karttika; for Burgess op: cit: states:—"We may also regard the rank assigned to "Karttika as due to the ancient position of Karttika as "first among the lunar mansions."

Warren, op: cit: page 213, after mentioning that Karttika and others, are the names of the 12 years of Jupiter's cycle says:—"It may be remarked that in the foregoing "arrangment Cartic is placed first in the cycle of 12." This would almost identify Cartica with Shi-ti-ko, which is the first name of Sze-ma-ts'iens cycle, and it shows that if this be so, the Shi-ti-ko cycle was one of 12 years in ancient times.

It may be also remarked that the first name of the 28 sieu in the ordinary nomenclature of the series, or "Kio," also corresponds with Jupiter; and this confirms the position of the serpent, which is identical

with Jupiter, as first in the series as exhibited by Perny.

It will also be observed that the 27th and 28th sieu in Schlegel's arrangement, are here placed as 1st and 2nd in the comparative list of 27, just as the 27th and 28th Hindoo Nakshattras, Aevini and Bharani, in Burgess' list are sometimes placed as the 1st and 2nd of the Hindoo series; as can be seen in Burgess, op: cit: page 211. It is also evident from this identity of the Hindoo months with the 12 cyclical animals, that the cycle of 12 was in its origin, a cycle of months, and not a cycle of years.

The comparisons thus made of the derivation of the Hindoo names of the months, and that of the names of the 12 animal cycle from the Nakshattras, and the sieu, respectively, bear out, therefore, the analogy between them as above mentioned. These comparisons must not however be pushed too far, as scientific argument; for although the Chinese derived their knowledge of the 28 asterisms and their consequences from the Hindoos, they only adopted them in a clumsy unscientific way, and the Chinese system does not altogether correspond with that of the Hindoos. Guerin, op: cit: page 164, points out that there is this great difference between the order of the 28 mansions in China, and in India, relative to the stars which are reckoned as forming part of them. It is that the first Chinese sieu "Kio" is identified with the star Spica Virginis. The first Nakshattra of the Hindoos, Aevini, is identified with "Aries."

The Chinese thus seem to have started their list from Spica, without following in this point the Hindoos, and seemingly without knowing why they did so.

Now as Guerin remarks, loc : cit : "Moyo, the author of "the Surya Siddhanta, must have observed Acvini or "Aries, on the night of the vernal equinox, at AD 345, 180° "distant from that equinoctial point, and he then placed "the other Nakshattras in order, by starting from that "point." Burgess op : cit : page 14 mentions, that it coincided in position with the vernal equinox, about A.D. 570.

As therefore the Chinese sieu Kio, is Spica Virginis, and also is 180° after the sieu Leou, which is the corresponding sieu to Acvini or Aries, the Chinese books which made the placement of Kio as their first lunar mansion, must be posterior to Moyo's time ; and it would follow that the whole Chinese system of 28 sieu, from which all their chronology seems to depend, is also of the same recent period.

It would be interesting to discover why the Chinese placed Kio, or Spica Virginis, as the first on their list of sieu, as it is not in accordance with the Chinese theory of the beginning of the year at the winter solstice. The name Kio, by which the Chinese call their first sieu, means a horn; and the Arabian and Persian and Indian series also begin with a horn, viz, that of Aries, the ram, which specially marks the 1st Hindoo Nakshattra.

It may be suggested as an answer to this enquiry, that as the Indian name for Aries is *Krio,* which is taken from the Greek ; and as Chinese cannot pronounce

the letter R they elided that consonant, and called the word *Kio*. If this is the case, all the antiquity of the Chinese 28 sieu, and their corollaries can be but a modern invention.

Fortia d'Urban op: cit: vol. II. page 69, remarks on this subject "except the Chinese, they have all taken "the same stars for the initial point of the division of "the 28 constellations; viz; the head of Aries. "The Chinese, on the contrary, have fixed the initial "point in the part the heavens diametrically opposed "to this, towards the feet of Virgo, and near Spica."

In explanation of this, Fortia d'Urban suggests, that this method of arranging the 28 sieu was probably caused by the Chinese having taken the *new moon* as the initial point, while the Hindoos and others took the *full moon*; or else by the Chinese beginning the arrangement at a different opposite solstice from that employed by the Hindoos.

If this were admitted, it would certainly disclose the modern origin of the Chinese acquaintance with the 28 sieu; for in adopting the method above suggested, they could not have been guided by their ancient tradition of the commencement of the month, according to Fortia d'Urban himself; as he mentions vol II. page 75:—"The "Chinese also, primitively regulated their calendars, "by the full moons:" and it is evident that the Hindoos did the same, from what Burgess mentions op: cit: 269:— "According to Sir William Jones As: Res: II. 296, it "is asserted by the Hindoos, that when their lunar year

" was arranged by former astronomers, *the moon was at* " *the full on the very day* when it entered the Nakshattra " from which that month is denominated"; though Burgess adds:—" whether this assertion is strictly " true admits of much doubt"—It is evident therefore that the Chinese did not anciently differ from the Hindoos on this point.

With regard to the commencement of the sieu by their relation to the *solstices*, it is much more likely to be the case, and it is probable that it was so in ancient times, as will be seen hereafter: but that does not account for their being arranged by beginning them at the equinoxes, unless there be some hidden scientific reason for so doing.

As Guerin further remarks, op: cit: page 171, 172, after giving a table of the animals of the 28 Coptic mansions, with the corresponding names of the Arabian and Persian mansions; that the name of the 14th Coptic mansion, Khoritos, which corresponds to the 1st of the Arabian and Persian mansions, and to the 1st Chinese sieu, means the station of the highest elevation of Spica Virginis, which occurs at the vernal equinox at midnight, just as the Arabian and Persian names Simakool, and Nazal, have also this meaning; and he thence " concludes:—It is evident, that the Copts, the Arabs, " the Persians,and the Chinese, who take the Spica of " Virgo, for the equinoctial point in their Nakhsrattras, " show by their doing so, that they have borrowed " these lunar divisions from the Hindoos, since the

" observations of Moyo; and not before his time, i. e.
" A.D. 346.

The derivation of the months and 12 names of the animal cycle from the Nakshattras, and sieu, is confirmed by the following remarks of Fortia d'Urban, op : cit :—Vol II. page 75 :—

" The Brahmins say, that when their calendar was
" regulated, the moon was at its full. The Chinese also,
" primitively regulated their calendar by the full moons.
" They borrowed the names of their months from a
" people who regulated them in a similar manner, whether
" it be the Indians, or any other nation; inasmuch as
" they have preserved the denominations of the months,
" which are but slight alterations from those of the
" Indians, and which, as they correspond to the same
" season, and to the same month, must have been taken
" from the same constellations, from which the Hindoos
" derived these names. There has been an intercom-
" munication, therefore, from wherever it came first, or a
" common origin of the calendars of the two peoples:
" Indians, and Chinese. This is proved by the fact, that
" the three months of winter, in the Chinese calendar
" are Pehoua, Mokue, Pholkuna. The three winter
" months of the Indian calendar are, Poucha, Mogh, and
" Phalgoun. Now these Indian names are taken from the
" the eighth Nakshattra, Pouchia; from the tenth,
" Makam; and from the twelfth, Phalgouni."

" Thus January is called Tai, in India; and Tybi,
" in Egypt; February is called Mokue in China, and

"Mekir in Egypt; March is Phalguna in India, and "Pholkuna in China, and Phamenot in Egypt. All these "months have the same initial letters. "Souciet, op: cit; Vol II, page 128, gives the following names of all the Chinese months, which are here reproduced, as possibly they may be of interest in these researches. He says they are taken from a book by Hing-yun-lou, called, memoirs for history of the Tang dynasty. Gaubil, in a note to this passage, says he could not find the book.

3 winter months	Peouha.. ..	January.
	Mokue	February.
	Polokuna ..	March.
3 spring months	Latenlo.. ..	April.
	Teicheku ..	May.
	Checheto ..	June.
3 summer	Ganchatou	July.
	Chelofamo	August.
	Potalopoto ..	September.
3 autumn	Ganche sou-yu ko	October.
	Kiolati Kia ..	November.
	Mokiechilo ..	December.

The corresponding Coptic months are taken from Arago's astronomy, Tomlinson's edition, 1856, page 26 and following:—

1. winter month	,,	,,	Tobi.
2.	,,	,,	Chery or Mechery.
3.	,,	,,	Phamenoth.
1. spring		,, ,,	Faramour.
2.	,,	,,	Pachous.
3.	,,	,,	Paous.

1. summer	„	„	Epep-Epephi.
2. „	„		Mesore.
3. „	„		Thoout.
1. autumn	„	„	Paopi.
2. „	„		Athor.
3.	„	„	Chorak.

The above mentioned names of the Chinese months, are doubtless modern, and more recently introduced than the animal names of the months; but they are ancient in India, and besides those analogies observed by Fortia d'Urban, others exist; such as :—

Bhadrapada	..	Potalopoto.
Cravana	..	Celofamo.
Aschadha	..	Gan *chatou.*
Mrgacirsha	..	Mo kie chilo.
Karttika	..	Kio la ti kia.

And probably the rest of the months may be also identified, and also the date may be discovered of their introduction into China, which would still further confirm the Indian origin of Chinese chronological computations.

There is still another very striking analogy between the 28 Hindoo asterisms, and their 12 months, and the Chinese 28 sieu, and their 12 animals.

It will be remembered that both Chinese and Hindoos anciently commenced the year at the winter solstice, just as the Chaldeans did. The 24 Tsie-ki commenced at the winter solstice. (see Gaubil, "Traite de l'astronomie "Chinoise," page 93.)

Schlegel op: cit: 21 quotes the author of the Tien-yuen-li-li (Siu-fa A.D. 1622) who states:—"The ancients "certainly began their calendar by the winter solstice."

The Hindoo Nakshattra, Pushya, and the month derived from it, denotes the winter solstice; and the Chinese sieu, Heu, also concurs with the winter solstice: so that by beginning both the series of 28 asterisms with the signs corresponding to the winter solstice, and continuing them both in this order, it will be seen that the 12 Chinese animal signs, which correspond to certain of the sieu, occur just in the same order as they stand in the ordinary way of mentioning them in the 12 cycle, viz, The Rat No. 1, and the rest *en suite*.

Pushya	Heu	*Rat.*	1
Aclesha	New	Bat.	
Magha	New	*Ox.*	2
P. Phalguni	Tow	Unicorn.	
U. Phalguni	Ke	Leopard.	
Hasta	Wei	*Tiger.*	3
Citra	Sin	Fox	
Svati	Fang	*Hare.*	4
Vicakha	Te	Beaver.	
Anuradha	Kang	*Dragon.*	5
Jyestha	Keo	*Serpent.*	6
Mula	Chin	Lombric.	
P. Ashadha	Yih	Adder.	
U. Ashadha	Chang	Small Stag.	
Abhijit	Sing	*Horse.*	7

Cravana	Lew	Stag.	
Cravishtha	Kwei	*Sheep.*	8
Catabhisaj	Tsing	Rabbit.	
P. Bhradapadra	Tse	Small *Monkey.*	
U. Bhradapadra	Tsan	Large *Monkey.*	9
Revati	Peih	Crow.	
Acvini	Maou	*Cock*	10
Bharani	Wei	Pheasant.	
Krttika	Low	*Dog.*	11
Rohini	Kwei	Wolf.	
Mrgacirsha	Peih	Yu	
Ardra	Shih	*Pig.*	12
Punarvasu	Wei	Swallow.	

It will be noticed that in the location of the Chinese sieu, the order of placing them has been reversed from the ordinary way in which they stand. This has been done to bring them in accordance with the position of the Hindoo Nakshattras, which run from east to west, whereas the Chinese sieu being placed from west to east, their serial order had to be transferred, so as to equalize the comparison of the two series.

This similarity between the Hindoo and Chinese systems, is still more remarkable, as it is in accordance with the astronomical assignment of the 12 animals; for the Rat is always placed at the winter solstice, and thus, the animal cycle commences at the winter solstice, just as the year and the 28 mansions do.

It is evident therefore, that this 12 cycle, and the serial order of its occurrence, descends from the Hindoos,

and it is symbolical of the months, reckoning from the winter solstice.

The 12 animals could not have been picked out from the 28 animals, corresponding to the 28 sieu, and arranged in this order fortuitously; for it is only by conjoining and comparing the two 28 fold systems of the Hindoos, and the Chinese, from the same solstitial point, that the cyclical order of the 12 animals can be produced.

There is another comparison required to be drawn between the Hindoo Nakshattras, and the Chinese sieu, in order to show the occurrence of animal symbols in connexion with the former; which, although it is not exactly similar with the animal representations of the Chinese sieu, is interesting, as it demoustrates that the same system prevailed in both, and that the Chinese derived thir ideal of animals, with reference to the constellations, from the same source, whence thy obtained a knowledge of the 28 sieu, viz., the Hindoos.

The following table will show this analogy clearly.

Names of the Nakshattras according to H.T. Colebrooks, Life and essays, Vol. III. 285.	Hindoo animal names of Nakshattras Guerin p: 43, &c.	Names of Chinese sieu in the corresponding order to the Nakshattras given by Burgess, page 324.	Chinese animal names of the 28, sieu.
Aswini.	*Horse's* head.	Low.	*Dog.*
Bharani.	*Fowl.*	Wei.	Pheasant.
Krittika.		Maou.	*Cock.*
Rohini.	*Serpent.*	Peih.	Crow.
Mrigasiras.	*Stag's* head.	Tsan.	Large Monkey.
Ardra.	Tortoise, or frog	Tse.	Small *Monkey.*
Pushyrasu.		Tsing.	Rabbit.
Pushya. (W.S.)		Kwei.	*Sheep.*
Aslesha.	*Dragon's* head	Lew.	Stag.
Magha.	*Monkey.*	Sing.	*Horse.*
Purva Phalguni.	Cow.	Chang.	Small Stag.
Uttara ,,	*Bull.*	Yih.	Adder.
Hasta.	Elephant's head	Chin.	Lombric.
Chitra.	*Leopard.*	Keo.	*Serpent.*
Swati.	*Serpent.*	Kang.	*Dragon.*
Visakha.	Buffalo's head.	Te.	Beaver.
Anuradha.	Peacock.	Fang.	*Hare.*
Jyeshtha.	*Young Deer.*	Sin.	Fox.
Mula.	*Tiger.*	Wei.	*Tiger.*
Purva Ashadha.	Lion.	Ke.	Leopard.
Uttara ,,	Lionness.	Tow.	Unicorn.
Abhijit.		New.	*Ox.*
Sravana.		Neu.	Bat.
Dhanishtha.		Heu.(W.S.)	*Rat.*
Satabhisha. [da	*Dog.*	Wei.	Swallow.
Purva Bhadrapa-	Bull.	Shih.	*Pig.*
Uttara ,,	Cow.	Peih.	Yu.
Revati.	Rhinoceros.	Kwei.	Wolf.

Corresponding Sieu to Nakshatras, departing from Winter Solstice, in usual order from west to east.	Corresponding order of animal Names of Sieu in this placement of them	Corresponding Sieu to Nakshatras, departing from Winter Solstice, from east to west.	Corresponding order of animal Names of Sieu in this placement of them.
Fang.	*Hare.*	Maou.	*Cock.*
Sin.	Fox.	Wei.	Pheasant.
Wei.	*Tiger.*	Low.	*Dog.*
Ke.	Leopard.	Kwei.	Wolf.
Tow.	Unicorn.	Peih.	Yu.
New.	*Ox.*	Shih.	*Pig.*
Neu.	Bat.	Wei.	Swallow.
Heu. (W.S.)	*Rat.*	Heu.	*Rat.*
Wei.	Swallow.	Neu.	Bat.
Shih.	*Pig.*	New.	*Ox.*
Peih.	Yu	Tow.	Unicorn.
Kwei.	Wolf.	Ke.	Leopard.
Low.	*Dog.*	Wei.	*Tiger.*
Wei.	Pheasant.	Sin.	Fox.
Maou.	*Cock.*	Fang.	*Hare.*
Peih.	Crow.	Te.	Beaver.
Tsan.	Large Monkey.	Kang.	*Dragon.*
Tse.	*SmallMonkey*	Keo.	*Serpent.*
Tsing.	Rabbit.	Chin.	Lombric.
Kwei.	*Sheep.*	Yih.	Adder.
Lew.	Stag.	Chang.	Small Stag.
Sing.	*Horse.*	Sing.	*Horse.*
Chang.	Small Stag.	Lew.	Stag.
Yih.	Adder.	Kwei.	*Sheep.*
Chin.	Lombric.	Tsing.	Rabbit.
Keo.	*Serpent.*	Tse.	Small *Monkey*
Kang.	*Dragon.*	Tsan.	Large Monkey.
Te.	Beaver.	Peih.	Crow.

It may be looked on as nearly certain that the 12 solar zodiacal signs used in modern astronomy, were derived from the 12 animals selected from the 28 animal symbols of the 28 asterisms; and the fact of the names of the 12 months having been selected from the names of the 28 asterisms supports this assertion.

The very meaning of the zodiac, shows that it was originally composed of animals; and those signs, such as, Libra, Sagittarius, and Aquarius, not being strictly animal signs, must have been introduced later than the primary symbols. With reference to this, the statement of Paravey, "Essai sur l'origine, &c, page 36, may throw some light on the question. "The "primitive alphabet of the Arabs has been overthrown, "and increased by the 28 constellations to 28 letters; "of which 14 were radicals, and 14 servile, and we "still see amongst the Arabs, 12 letters called solar."

As there is an evident connexion between these 12 solar letters amongst the 28 letters of the Arabic alphabet, and the 12 animals amongst the 28 asterisms; it would look as if these 12 animals were really the primitive solar zodiac.

Paravey, also quotes, oc: cit: Anquetil, Zend Avesta, T. I. p. CCXIII, a passage cited by Hager, that the Sanscrit language was primitively 28 letters, though afterwards increased to 60; which is all the more interesting, as it shows how the 60 period was developed from that of 28, as has been already made evident above. The Chinese seem not to have known the

actual signs of the zodiac, until at a very recent period; and keeping in view the identity of the zodiacal signs with the cycle of 12 animals, they could hardly have known even about these latter, in very ancient times.

The Babylonians, or rather their predecessors the Accadians, named their months after the 12 zodiacal signs, just as the Hindoos named their 12 months from 12 of the Nakshattras: see Sayce, "Babylonian literature &c," page 55: and this same author says that, "we owe " to the Accadians, the signs of the zodiac" so that this invention must have been ancient, and the Chinese, by the fact of their having been unacquainted with them at a coeval date with the Accadians, are excluded from sharing in antiquity with that people.

The 12 Accadian names of the months were:—

Iygar.	Marchesvan.
Sivan.	Chisleu.
Tammuz.	Tehet.
Ab.	Sebat.
Elul.	Adar.
Tisri.	Ve Adar.

See Records of the past, Vol. VII, page 169.

It would be interesting to discover the meaning of the above Accadian names of the months, and whether they are the same symbols as the 12 animals in the Chinese cycle, especially as the Chinese adapted the animal cycle to the appellation of the 12 months.

Professor Weber, in his "Indische Studien," states 'that the 28 fold division of the ecliptic was known and

used by the Babylonians; so that it is not at all unlikely, but even probable, that they derived the names of their 12 months from their 28 division of the heavens, just as the Hindoos did.

It is possible that the primitive appellations of the 28 division of the ecliptic were not those of animals. Guerin, op: cit: at the end, gives drawings of several early Persian, Assyrian, and Babylonian ancient monuments having 28 figures on them in connexion with the 12 zodiacal solar signs, and these are all human figures, armed like soldiers and supposed to represent the "*Hosts of heaven,*" (4 Kings, 23, 5.) They are evidently also figures of the 28 fold division of the solar ecliptic.

In Egypt, the 28 constellations, according to Paravey, op: cit: page 31, are formally traced in the zodiacs of Esne and Denderah, with animal heads on human figures, just the same as Guerin, op: cit: 51, says they were in India, and according to Paravey who quotes Remusat, in China also. Guerin, op: cit: 224, says, "The " 28 Nokhyottsos are represented by 28 figures in the " Isiaque table, and there, the signs have several animals, such as the ox, lion, scorpion, pig, dog, hare, cock, stag, tortoise, frog, the jackall, the ass, hippopotamus, ram. Those nations therefore who identify them with animal names, would only have become acquainted with them later, and they adopted their own ideas of the stars, as representatives of animals, to the 28 asterisms.

It is quite certain that the Babylonians divided the sky into four equal parts, (see Sayce, page 54,) similarly

to that which Schlegel says was the basis of the 28 division, or four part of 7 each; and also that each month of the Babylonians was also divided into 4 parts of 7 days each; by which the 7th, 14th, 21st and 28th, day were kept as days of rest; and each day in the series of 7, was named after the sun, moon, and 5 planets, just as each part of the four divisions of the heavens, is named by the Chinese, after the same planets, and even each day of the 28 days in similar order. The Babylonians therefore had some ascertained theory that 28 periods were the limit of the connexion of the moon with the heavens, as Mr. Proctor has well observed.

This division of the 28 stations of the heavens into four portions, supposed to correspond with the four seasons of the year, is however, not absolute, and too much stress need not be laid upon it. De Vertus, op: cit: page 10. writes on this subject as follows:—

"The four seasons, in the sense in which we under-
" stand the word, have never existed. These definitions,
" merely applicable to some portions of the earth, cease
" to be so over the greater part of its surface. The
" inhabitant of the polar region knows nothing about
" four seasons, for he is enveloped in a night of six
" months. The inhabitant of central Africa, burning or
" drenched on the equator, has neither any knowledge
" of them. The torrid zone has but two seasons, the
" one dry, and the other rainy. The four seasons are
" the four great upheavals of the earth and of the seas,

" at the four full moons of March, June, September, " December."

Lewis, op: cit: page 11, writes on this subject:—"The " division of the four seasons, though of considerable " antiquity, is not decisively indicated in nature. The " antithesis between summer and winter is obvious; the " revival of nature in spring, after the torpor of winter, " is also a marked epoch. But autumn is a less definite " season. Hence a division of the year into the three " seasons, spring, summer and winter, is attributed to " the ancient Egyptians. The year of the ancient Ger- " mans, consisted only of these three seasons, according " to Tacitus; and in English, the same three seasons " are denoted by Anglo Saxon words; whereas the word " autumn is borrowed from the Latin."

It is quite sufficient for the present purpose, to have shown that the measurement of the moon's motion through the heavens, by 28 periods, which have been seen, are the basis of all Chinese chronology, was unknown to them at the ancient time, when they were certainly in use by other more ancient nations, such as the Babylonioms, and Indians. It would even appear that this 28 division of the heavens was known to the Egyptians, (see Bailly, op: cit: page ci.) but they seem to have adhered rather to the consequences that other nations had drawn from them, in the form of a 12 fold division of the heavens, than to have retained the original system of astronomy, which has still lingered amongst the Hindoos, Persians, Arabs, and Chinese

Bonwick, "Egyptian belief and modern thought," London 1878, page 331, writes:—"The lunar mansions, "as they are called in astrology, are 28 in number both "in Chaldea and Egypt. Osiris is reported to have "lived 28 years in the world," and at page 233, "Aais, "the bull god, when he arrived at the age of 28, if "living so long, was solomnly put to death, since Osiris "died after 28 years."

The Copts certainly retain the 28 division of the heavens. Guerin gives a list of them, op: cit: 171, which he extracted from Kircher. It is remarkable, that the 28 Coptic asterisms have exactly the same local relation to the Persian, and Arabian mansions, as the Hindoo Nakshattras have to the Chinese sieu; viz, that the 1st Coptic mansion corresponds to the 16th, of the Arabs and Persians, and the 14th, Coptic mansion is related to the 1st mansion of the Arabs, and Persians, just as that of the Hindoos does to the corresponding asterims of the Chinese. The Egyptians seem to have been earlier and more scientific learners of this mode of dividing the heavens, and of computing time, than the Chinese; as the Chinese adaptation of the 28 asterisms involves a more modern astronomical departure, than that which is observable in the ancient Hindoo and Coptic systems; and their method of arranging them seems to have no scientific basis.

There should be however, a distinction drawn between the first knowledge of the 28 sieu acquired by the Chinese, and the after knowledge of the same,

which has been shown to have come to them from the Hindoos. Burgess shows that this first knowledge of the 28 sieu, was not derived from the Hindoos, but from another source; as the Hindoo and Chinese systems do not agree. The knowledge of the 28 asterisms proceeding from west to east, must have belonged to the first knowledge; of which only a vague portion, unconsciously, remains in the the minds of Chinese. It is quite possible, and even probable, that the Chinese received this first knowledge through the astronomers of Balkh, who had learned it from the Babylonians as part of an astronomical system. The knowledge of the sieu and their consequences, from whatever source derived, has always remained equally unintelligible to the Chinese, though they have used it in a fanciful way, to build upon them an equally imaginary chronology.

From the above examination, and analysis, of the Chinese cycles, on which the whole structure of their chronology is based, the conclusion requires to be admitted, that the cycles, of 60, 28, 12 and 10, as used by them, had no historical existence in China, in the early periods of history, to which Chinese have assigned them. Moverover, that the 60 year cycle is traceable to the Hindoo cycle of Jupiter, which is known to have been introduced into China, at comparatively a much more recent time, than that at which it is gratuitously supposed to have originated there: that the cycle of 10, is known historically to have been certainly used by

other nations, before Chinese reliable history affords any record of its use in China: and that any claim made by Chinese, for priority, in the knowledge of this, is critically unsustainable: that the cycle of 12, was not used for reckoning years, until long after the date assigned by Chinese for its introduction, and employment, for that purpose; and that it is subsequent to, and derived from, the cycle of 28, or the 28 sieu; and that at the utmost, the Chinese themselves confess that they know nothing certain, about the commencement of their knowledge of either the 12, or 28 cycle, as represented by animal symbols; and that consequently, they can offer no reliable data for the time of their first appearance in China; so that there is every reason for believing, from the evidence above adduced, that they both came to China from the Hindoos, in quite recent times; and that they were even never understood scientifically by the Chinese, until still later times; and that any argument drawn from the superficial acquaintance the Chinese possessed of those cycles, can not lead to establishing that they even were capable of devising, and much less that they were anciently intelligent enough, for scientifically employing, the chronological cycles and tables, which they parade before the unlearned, as the genuine chronological record of an enlightened antiquity.

The chronology of the Chinese can therefore only be considered as an elaborate fictitious contrivance, to put in narrative and historical order, the traditions that have filtered through the outskirts of ancient civilised

Central Asia, towards Chinastan; where at different periods, outcasts and adventurous military chiefs, and even colonies, have found a dwelling place, and have brought thither with them, the traditions of their former homes, which gradually their descendants have imagnied were those of ancestors, who had lived all the times of those traditions in China; and thus they appropriated them, for their own glorification, and that of their adopted contry.

The natural consequence of this, would necessitate a chronology, in order to give consistency, and speciousness, to the historical narrative; and it is at least creditable to the Chinese ingenuity, that they could devise a system of dates, and epochs, by which they compose a history, and make it pass current, as the records of their race, during periods in which they had no national existence.

APPENDIX.

REGARDING the preeminence, or even the presence of the Rat in the Chinese animal cycle of twelve, and which, considering the material insignificance of this little creature, suggests some special reason for even assigning it any position in a highly symbolical series of animals; the following extracts from writers on the subject are here inserted, for reference, and to suggest further investigation as to the origin of this singular prominence given to the Rat by the Chinese.

Klaproth, in his "Memoires relatifs à l'Asie," Vol. II. page 296, gives an extract from Remusat's "Histoire de "la ville de Khotan," and presents it, as a singular connexion, between the traditions preserved among the peoples of Central Asia, and those of the Egyptian priests, related by Herodotus. It throws some light on the fact, that the Rat is connected with the sacred animals forming the zodiac.

"A considerable army of Huns, (Hioung Nou) or "Turks, made an invasion into the Kingdom of Khotan. "The King of that country, had not sufficient forces, to "oppose to the enemy. He therefore prepared a sacri- "fice to the Rats of the desert, and supplicated them "to become his auxiliaries. The same night, he saw a

"large Rat, who said to him; You have claimed our "succour; dispose your troops for giving battle to- "morrow morning, and you will be the conqueror. The "next morning, the King suddenly attacked the Hioung "nou. These being taken unawares, wanted to mount "their horses, and to don their armour; but it so hap- "pened, that the harness of their horses, and the clothes "of their soldiers, and the strings of their bows, and "the straps of their armour; in fact, all that was made "of stuff or thread, had been entirely gnawed and torn "in pieces, by the Rats; and thus the whole army were "made prisoners. The King of Khotan, wished to "testify his gratitude to the Rats, for such an important "service: he built a temple, offered sacrifices, and ever "since they have unceasingly made offerings there."

The Egyptian tradition, is, that Sethos, a priest of Vulcan, succeeded Anysis, and having neglected to keep up his army, they refused to march, when Sennacherib, King of the Assyrians, and Arabs, attacked Egypt. Sethos, alarmed, went to the temple of Vulcan to ask help, and he fell asleep, and saw the deity in a dream, who promised him assistance, and bid him not to fear. Sethos, then marched to Pelusium, with all the men he could muster. When he reached it, a multitude of field Rats, spread over the enemy's camp, and during the night, gnawed the bow strings, the quivers, and the thongs of the shields, so that the army was obliged to flee. In memory of this, there was placed in the temple of Vulcan, a stone statue of Sethos, *with a Rat*

in his hand; and this inscription "While beholding me, we learn to revere the Gods."

With reference to the Rat in Tartary, Klaproth, op: cit: page 299, writes:—"During my stay at Irkutsk in "1806, a report was received from the commandant of "Okhotsk, which stated, that an innumerable troop of "Rats, having crossed the sea, had not only eaten up "all the stores in the government magazines, but that "they had even eaten the magazines."

The Rat in the Chinese cycle is sometimes called the Mouse, and this little animal held a place in Turanian mythology. Keany, in the "Dawn of history," page "172, 173, writes:—"The Slavonic dwellers of Hameln "in the legend of the Pied Piper of Hameln, had a "notion which likens the soul to a mouse, and spoke "mythically of the deaths of children, as "the "departure of the mice:" perhaps because "the mouse "which hibernates like the sleeping earth": just as "for a similar reason the Beetle was made a symbol of "the soul, or of immortality, among the Egyptians."

Was the Rat amongst the primitive Chinese or Tartars the symbol of the future state of the souls of theis ancestors?

Bonwick, "Egyptian worship and modern thought" "London 1878, Chapter, Animal worship; writes:—In "the Egyptian scriptures, the worship or "adjuration "of the Rat, took place at Heracleoplis. The Ich-"neumon, and Rat, were more feared, than honoured, "as they represented destruction."

Gustave Schlegel, in his "Uranographie Chinoise" page 768, thus writes about the Rat in the cycle of twelve animals:—"The emperor Kanghi, two centuries, "ago, gave the following description of the Mam- "moth in his "Phsysical observations" (See Mem- "oires des Chinois, IV, 481,) The cold is extreme, and "almost continual, in the place where is found the "animal called Ping-chou, (The Ice Rat) the shape "of which resembles that of a Rat, but which is as "large as an elephant: It inhabits obscure caverns "and unceasingly shuns the light. An ivory is taken "from it which is as white as that of the elephant. "The ancient book, Chin-y-king, speaks of this animal "in these terms. There is in the extreme north, a- "midst the snow and ice that covers that country, a "Rat, which weighs as much as one thousand pounds; "the Tse chow-le, calls it the Ping-chou, or Ice Rat, "and mentions, another species which is no larger than "a buffalo."

A question suggest itself here, as to whether the Rat of the Chinese cycle was originally the elephant, that represents the 20th and 21st Indian mansions, of the lunar cycle of 28.

End of Part the First.